

SOME FACTORS ENTERING INTO THE ADMINISTRATION
OF KINGMAN HIGH SCHOOL

by

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INTRODUCTION

The first duty of the principal of a high school in going to a new location is to find out all that he can about that location. This involves a study of the kind and character of the people he is to serve, their occupations, and their resources. It involves a study of the educational opportunities that the community offers. This leads logically to a study of his own particular field. The principal of a high school in a second class city of Kansas is concerned principally with his student body and with factors directly concerned with that student body. Matters of finance are usually left to the school board and superintendent. The matter of supervision of instruction by the high school principal is becoming increasingly important, as is the matter of curriculum changes and curriculum adjustment to the pupil. Discipline is also a large factor in the success of the high school principal.

Before any changes should be made in the administration of his school, the principal should understand thoroughly what he is doing and have the data to justify his action. He must know from what kind of schools and homes his pupils come. He should know the facts concerning the intelligence and the ages of his students. Then he should attempt to find out how

well the school is meeting their needs, what the percent of failure is, whether or not pupils are taking the right courses, what percent of them stay in school and finish, and how well the graduates succeed after leaving his school. Before he has made these investigations, he has no authority upon which to make changes. This paper is an attempt to answer some of the above questions with respect to one senior high school.

METHOD AND DATA

The data regarding rural school graduates and the high schools they attended were obtained through the cooperation of the county superintendent of schools and the principals of the high schools of the county. In order to make this data more reliable, investigations were made over a period of two years. Data of the high school student body were obtained from the permanent records of the high school and from the pupils themselves. The grade study was made to cover a period of six years. Intelligence tests were given to the entire student body. Grades of all the high school graduates going to college for the last four years were obtained from the registrars of the various colleges.

THE ENVIRONMENT

The County Secondary Schools

Kingman County, located in the south central part of Kansas, is a typical agricultural county. The main industries are farming and cattle raising, and the main crop is wheat. At the present time the county has no mineral resources of any kind or any oil wells. No main line railways go through the county. There is only one second class city in the county, which is Kingman, the county seat. The county is not very thickly populated, as is shown by Table I.

Table I. The Area and Population of Kingman County

Population	12,119
Area in Square Miles	867
Population per Square Mile	14

The county is one of the average counties of the state with regard to population, ranking about the median. It has an approximate population per square mile of 14. This is due to the fact that there are no large cities in the county. There are nine secondary schools, all of which are four year high schools, and are well distributed. The total secondary school enrolment as shown by the school reports of September 1, 1928, was 683. Of this secondary school population, approximately 47 per cent, or 325, were enrolled in the Kingman high school.

Table II. The Kingman County Secondary Schools

School	Enrolment	Number of Teachers	Years in Course	Class	Distance in miles from Kingman
Kingman	325	12	4	A	
Norwich	71	4	4	B	28
Cunningham	69	4	5	D	18
Spivey	49	3	4	B	30
Zenda	44	3	4	C	27
Belmont	41	2	4	D	14
Nashville	35	2	4	C	32
Penalosa	30	2	4	D	12
Adams	19	2	4	C	22

The county is, therefore, rather unbalanced as to its school facilities and opportunities. The brunt of bearing the educational load falls upon the Kingman high school. This is partly due to the fact that the population of Kingman city is approximately 2,407. The Kingman high school is supported and maintained primarily by School District No. 1, which consists of the city proper and rural territory to an approximate depth of one and one-half miles surrounding the city. The county operates under the Barnes law, and the county tax under this law at the present time is 1.35 mills. It will be seen from the enrolment figures just shown that the Kingman high school draws its enrolment not only from the school district but from a large territory around the city. The fact that it is the only large school of the county and the fact that no tuition is charged encourage

parents to send their children to that school.

**The Number of Eighth Grade Graduates, with
the Number Entering High Schools.**

A survey of the number of graduates of the eighth grade was made, in order to see how many continue their education. This would give some idea of the popularity of secondary education in the county, as well as show the amount of selectivity of the high school group. Two classes, those of 1927 and 1928 were taken, in order to make the results more accurate. The students of Kingman high school come, in general, from three classes of schools. Some come from the schools of the county having an eight month term, some from schools of the county having a nine month term, and the rest from the Kingman city schools. For the purposes of comparison, these students have been divided into the two groups, those from the schools having an eight month term, and those from the schools having a nine-month term.

Table III shows the eighth grade graduates of the county in 1927. In this year, there was a total of 247 pupils graduated from the elementary schools of Kingman County.

Table III. Eighth Grade Graduates of 1927

Type of School	Boys	Girls	Total
8 month school	62	71	133
9 month school	52	57	109
Total	114	133	247

Of these 247 graduates, 136 came from 60 rural schools having an eight month term, while 109 came from 11 schools having a nine month term. Of these 247 graduates, 114 were boys, and 133 girls. Table IV shows the same data with regard to the graduates of 1928. It will be seen that there is very little difference in the total number of graduates each year, and that each year more girls finish their preliminary schooling than do boys. In Table V, the data from the two tables have been thrown together.

Table IV. Eighth Grade Graduates of 1928

Type of School	Boys	Girls	Total
8 month school	61	57	118
9 month school	58	74	132
Total	119	131	250

Table V. Eighth Grade Graduates of 1927 and 1928

Type of School	Boys	Girls	Total
8 month school	123	133	256
9 month school	110	131	241
Total	233	264	497

There are evidently as many graduating from the schools of the county having eight months in the school term as there are from the better schools of the county.

The question that now logically follows with regard to these people is the one concerning their secondary schooling. How many of these people go on to high school? To find the

answer to this question, a list of the graduates of 1927 and 1928 was sent to all of the surrounding high schools, in or out of the county, to which they might be expected to go, and the principal of the high school asked to check those attending his school. Information was also asked concerning those who had left the state. From the group of 247 pupils graduating in 1927, it was found that 27 boys and 44 girls did not enter high school the next year. This is shown in the following table.

Table VI. Number of Eighth Grade Graduates Not Starting to High School in 1927

Type of School	Boys	Girls	Total
8 month school	21	29	50
9 month school	7	14	21
Total	28	43	71

It will be seen from this table that more girls are eliminated in this jump from grade school to high school than boys. Also that the greatest per cent of elimination takes place among those graduates from the rural schools. This is further shown in Table VII, in which the numbers are reduced to per cents.

Table VII. Per Cent Eighth Grade Graduates Not Starting to High School in 1927

Type of School	Boys	Girls
8 month school	34	38
9 month school	13	24

In this year, 38 per cent of the girls graduating from the eight month schools of the county did not go on to high school. The figures for the next year's class show a slight improvement. Of the 250 members of this class, 50 did not start to high school. The girls again lead in the number eliminated, and the number from the eight month schools again exceeds that from the nine month schools.

Table VIII. Number of Eighth Grade Graduates
Not Starting to High School in 1928

Type of School	Boys	Girls	Total
8 month schools	14	14	28
9 month schools	7	15	22
Total	21	29	50

Table IX shows the per cent for this class.

Table IX. Per Cent of Eighth Grade Graduates
Not Starting to High School in 1928

Type of School	Boys	Girls
8 month school	23	25
9 month school	12	20

An average taken for these two classes should give figures which would be typical for the next few years, unless an abnormal change in population or conditions should occur. In order to obtain average figures, the figures for the two years are thrown together.

Table I. Number of Eighth Grade Graduates Not Starting to High School in 1927 and 1928

Type of School	Boys	Girls	Total
8 month school	35	43	78
9 month school	14	29	43
Total	49	72	121

Table XI. Per Cent of Eighth Grade Graduates Not Starting to High School in 1927 and 1928

Type of School	Boys	Girls
8 month school	28	38
9 month school	13	22

The group showing the least amount of elimination is that of the boys from the nine months schools. It is to be expected that more pupils of the nine month schools would go to high school than those of the eight month schools, because the majority of these schools are located in the towns that maintain high schools, and it is convenient for them to go. Convenience to a high school is probably one of the greatest factors encouraging pupils to go. Probably the fact that more girls from the nine month schools are eliminated than boys is because the boys who do not care to go to school have reached the compulsory age limit, and have already quit school. Records show that more girls than boys marry during this period, which may explain why a certain

Table XII. A Summary of Previous Tables

	8 month schools			9 month schools		
	Boys	Girls	Total	Boys	Girls	Total
Graduates, 1927	68	76	138	32	57	109
Number not attending high school	21	22	50	7	14	21
Per cent not attending high school	34	36	36	13	24	19
Graduates, 1928	61	57	118	58	74	132
Number not attending high school	14	14	28	7	15	22
Per cent not attending high school	23	25	24	12	20	16
Graduates 1927 and 1928	123	133	256	110	131	241
Number not attending high school	35	43	78	14	29	43
Per cent not attending high school	28	32	30	13	22	18
						24

per cent of the girls do not go on to school. This may be a factor in the elimination of the girls from the rural schools. This group shows the greatest amount of elimination. All of the figures of the foregoing tables have been used in Table XII. This table shows that over a period of two years, thirty per cent of the graduates of the eight month schools did not start to high school, and 18 per cent of the graduates of the nine month schools of the county did not go on to school. A total of 24 per cent of the common school graduates have probably finished their education, for it is improbable that any will go to trade or technical schools, or business college, if they do not go on to high school.

Over this period of two years there was a total of 497 graduates from the common schools of the county. Of these graduates, 256 were graduated from the eight month schools, and 241 from the nine month schools. Of this total group, 264 were girls, and 233 were boys. Thirty per cent of the graduates of the eight month schools did not continue in school, while only 18 per cent of the graduates of the nine month schools did not continue. A total of 24 per cent did not continue. Seventy-six per cent of the graduates, or of the 497, did start in high school. Where they started to school is shown in Table XIII. This table shows, on the

average, the number and per cent of the common school graduates that each high school of the county can expect.

Practically 45 per cent of these start to the Kingman high school. The rest are fairly evenly distributed among the eight other schools of the county, with a little over eight per cent attending high schools or private schools outside the county.

Table XIII. Where Common School Graduates Attend High School

High school	Number 1927	Number 1928	Total number	Per cent of total
Kingman	75	95	168	44.7
Norwich	17	10	27	7.2
Spivey	15	16	31	8.2
Cunningham	12	19	31	8.2
Zenda	11	9	20	5.3
Belmont	10	11	21	5.6
Nashville	4	9	13	3.5
Penalosa	9	8	17	4.5
Adams	7	8	15	4.0
Out of county	16	17	33	8.8
	176	200	376	100.0

THE HIGH SCHOOL STUDENT BODY

Enrolment

It has been shown by the preceeding tables that about 46 per cent of all of the graduates of the common schools of Kingman county attend the Kingman high school. Table XIV shows the enrolment of the high school by grades, and by boys and girls. This table is quite characteristic of the enrolment for the last two years, and will be characteristic of the enrolment next year. It will be seen that the girls as a group considerably outnumber the boys. This is quite characteristic of Kansas high schools. In view of the fact that more girls were eliminated between the eighth and ninth grades than were boys, it is to be supposed that a considerable number of boys have been eliminated before this time, and that the high school retains its girls better than it does its boys. This supposition will be considered later.

Table XIV. Enrolment of the Kingman High School, 1928

Grade	Boys	Girls	Total
9	57	50	107
10	32	46	78
11	39	38	77
12	16	44	60
	<u>144</u>	<u>178</u>	<u>322</u>

A question that arises is that of the source of these students. This question is answered in the following table.

Table XV. Composition of the Freshman Class, 1928

Source	Boys	Girls	Total	Per Cent
Kingsman city schools	28	20	48	44.9
County 8 month schools	20	19	39	36.5
County 9 month schools	4	2	6	5.6
All others	5	9	14	13.0
	<u>57</u>	<u>50</u>	<u>107</u>	<u>100.0</u>

The two main sources of students are the Kingsman city schools and the county eight month schools. Very few pupils come in from the other schools of the county, and these perhaps only when they have relatives with whom they can stay. The other factor, that of students coming in from outside the county, or whose folks move in to town, is a variable factor and is probably larger this year than may usually be expected. The important fact shown in this table is that there are two distinct groups of students. There are those who have gone to the eight month schools and those who have gone to the Kingsman city schools. Perhaps this is not so important so far as the factor of the length of term is concerned, although it would be supposed that those coming from schools having a nine month or longer term and usually better prepared and paid teachers, would be better prepared to do the work of the high school. A more important factor for this study, however, is the manner in which it affects the

work of the Kingman city schools, and the courses offered in the high school. The Kingman schools are operated on the 3-2-4 plan. This means that the pupils have two years of junior high school, or departmentalized work, before they come to the high school. Sewing and cooking and manual training, as well as some art work, have been offered. In the first year of high school, the people who have had preliminary work in these subjects must take the work with those from the eight month schools who have had no training of this nature. One or the other of these groups will probably be neglected, at least for a semester. There will at least be enough difference between these groups in starting that the teacher should know to which of the groups each pupil belongs, in order to be most helpful to him.

Vocation of Parents

The vocation of the parent undoubtedly has a great influence on the life and general knowledge of the pupil, and the general vocations of the community should have an influence on the type of courses offered in the high school. Certainly the environment of the pupil has affected, and continues to affect, the character of the pupil during his stay in school. According to Aldrich (1927) there is little difference in the intelligence levels of the different occu-

pational groups. Most authors agree, however, that the labor group usually shows the lowest level of intelligence, but because of greater selectivity the pupils from this group usually rank well up with the other groups. Regardless of the intelligence level, the occupation or vocation indicates economic stability or lack of stability, and consequently a difference in home conditions which will affect the pupils school work. A knowledge of the environment should help the principal and teacher to solve many individual and personal problems. This information should show on the pupil's personal record card. Since the average high school can have no visiting teacher to make the contact between the home and the school, much of this work must and should fall upon the principal, although ultimately all of this information should be given the classroom teacher. The general information regarding the number of vocations present is given in Table XVI. This classification is general in nature but gives the idea of the number and kinds of vocations represented in the high school. The table shows that over fifty per cent of the pupils come from farm homes. Because of this fact, it would seem that a large number would be interested in such courses as vocational agriculture and home economics. This is not true, however, to any large extent. The commercial course and the college preparatory course have the

Table XVI. Vocations of Parents

Vocation	Boys	Girls	Total
Farmer	75	88	163
Business	29	30	59
Professional	8	7	15
Trades	2	16	25
Public service	5	5	10
Laborer	14	19	33
Housewife	4	4	4
Unknown		4	4
	144	178	322

greatest fascination for the pupils, although very excellent courses are offered in the vocational group.

Age at Entrance

The factor of age is an important one, since the age of the pupil will determine to some extent his ability to do work. It also shows the amount of retardation or acceleration. In order to find the median age at which the pupils enter high school, the ages of all students in four different entering classes were calculated and the median for each found. These ages were further divided into two groups, with regard to the schools from which they came. Those from the city schools are placed in one group and those from the rural schools in the other. Over the period of seven years there seems to have been little change in the median age at which pupils start high school, although there is a slight

Table XVII. Ages of Students at Entrance, with
Regard to Origin

Year	Total cases	Median of all ages	Median of rural ages	Median of city ages
1922	90	15-1	15-0	15-1
1923	109	15-1	15-0	15-2
1924	101	14-11	15-3	14-11
1928	100	14-11	14-8	14-11

tendency for them to start at a younger age. The median age of the class entering in 1928 was two years younger than the one entering in 1922. There also seems to be very little difference between the groups of rural and of city pupils. They vary slightly from year to year, but these differences are very nearly equalized. If anything, those from the rural schools seem to get into high school a trifle earlier than their city cousins. Both groups, however, seem to be slightly retarded. At least, they are very close to the upper limit of the ages which are regarded as normal for entering the ninth grade.

Table XVII still further subdivides these ages with regard to the sex of the pupil.

Table XVIII. Ages of Pupils at Entrance, with Regard to Sex and Origin

Year	Total Cases	Median Ages			
		Rural		City	
		Boys	Girls	Boys	Girls
1922	90	15-3	14-11	14-7	15-4
1923	109	14-10	15-1	15-4	14-11
1924	101	15-6	14-3	14-11	14-7
1928	100	14-10	14-8	14-11	14-10

It will be seen that the groups vary somewhat from year to year. The rural girls seem to be, on the average, the youngest group entering high school, while the rural boys seem the oldest. The girls as a group are slightly younger than the boys.

An Age-Grade Survey of the School

The median ages of the groups just shown indicate that the groups are slightly over age at entrance. In order to see if this was true of the school at large, an age-grade table was made. In this table, the ages as normal for each grade are those commonly used by most authorities, and the ages are computed to the nearest birthday. A pupil is considered at age for the ninth grade if his age falls within the limits of thirteen years and six months and fifteen years and six months. The next group would come between the limits of fourteen years and six months and sixteen years

and six months. The following table shows the numbers in each grade at each age.

Table XIX. Age-Grade Table for Kingman High School

Age	9	10	11	12
12	1			
13	4			
14	26			
15	45	12	1	
16	14	34	12	2
17	8	18	34	14
18	1	5	20	24
19		2	2	9
20 and over	1	1	2	3
Total	100	72	71	57

The table also shows the number that are above age and below age for each grade. It shows clearly that a large number in the high school are over age for their group. As there are very few below age for their grade, it results in a more homogeneous grouping than might be expected. However, there is a range of nine years found in the ninth grade, a range of six years in the tenth, a range of six years in the eleventh, and a range of five years in the senior year. This would seem to indicate that many of those who are older than their group are lost from high school before they graduate. A difference of five or six years in age at this time of life might create a serious problem in teaching and in the adjustment of the extreme individuals. Table XX shows the same facts as the above table, except that it is given

in terms of per cent.

Table XX. Age-Grade Table by Per Cents

Age	9	10	11	12
12	1			
13	4			
14	26			
15	43	13.5	1.4	
16	14	47.2	13.2	3.5
17	8	26.0	47.9	24.6
18	1	7.0	28.2	42.1
19		2.8	2.8	15.8
20 and over	1	1.4	2.8	14.0
Total	100	100.0	100.0	100.0

Table XXI shows that, of the entire school, very few are under age, while practically a third of the pupils are older than the norm for their grade. This shows again that very few pupils are accelerated in the grades. The causes of this large amount of retardation are not known. The fact that it does not vary greatly in the four years of high school would indicate that progress is normal after the pupil enters high school, with the exception that there is a decreasing amount of over age.

Table XXI. The Per Cent of Students in Each Grade under Age, of Normal Age, and above Age.

	Grade			
	9	10	11	12
Under age	5		1.4	3.5
Normal age	71	63.8	64.8	66.7
Over age	24	36.2	33.8	29.8

It might be asked if the same condition does not exist in all high schools of the state. For the purpose of comparison, Table XXII is given.

Table XXII. Percentage of Students under Age, at Normal Age, and over Age, as Shown by the O'Brien Survey, 1929.

	Grade			
	9	10	11	12
Under age	7.5	9.5	12.0	12.5
Normal age	55.5	59.0	59.0	60.0
Over age	36.5	31.5	29.0	27.0

This table was made from figures obtained from a large number of high schools over the state of Kansas, and, therefore, should be representative. We find an average of approximately ten per cent of underageness over the state. In all cases, it is larger than that in the Kingman school. The per cent of averageness in the Kingman high school is also slightly higher than that given in this table. According to O'Brien (1929), in the smaller schools a smaller percentage is under age and a larger percentage over age than in the larger schools. As the average school included in this survey is smaller than the Kingman school, the small percentage of underageness in the Kingman school cannot be excused on the basis of the size of the school. One must conclude that there is more overageness in the Kingman school than in the average school. Ayer, Director of the Depart-

ment of Research of the Schools of Seattle, (1934), says that the presence of a large number of relatively old pupils in the high school, other things being equal, is everywhere taken as an indication of school efficiency, because it is a mark of the holding power of the school. The holding power of the school is one of the first measures of success. If the high school is not adapted to attract and care for its high school population successfully, it cannot be said to be giving satisfactory community service. The amount of over-ageness may be due to the fact that some people are hesitant in starting their children early.

INTELLIGENCE AS SHOWN BY THE TERMAN TEST SCORES

In order to get reliable data as to the intelligence or ability of the pupils, the Terman Group Test of Mental Ability was given to the entire student body present on a certain day. The Freshman tests were given early in September as an added aid in the adjustment of the incoming pupils, and the other classes took the tests in January. A total of 297 tests were given. Intelligence quotients were calculated for all pupils. The test scores according to the different classes are shown in Table XXIII. The range of the scores was from 146 to 15 in the freshman class, from 186 to 49 in the sophomore class, from 202 to 66 in the junior class, and

from 209 to 80 in the senior class. These scores show what one would expect. There is a steadily increasing high score and a steadily increasing low score. So far as the seniors were concerned, there were only two with a point score of less than 100. Both of these were over age, and had a failure record, but graduated in four years' time. O'Brien found in his survey, over 300 out of 2,403 seniors, or over twelve per cent, who had scores below 100. Many of these were as low as 70, with some as low as 50. Evidently the minimum point score a pupil may make and still graduate from high school is fairly low.

Table XXIII. Terman Test Scores with Reference to School Grades.

Scores	Grade				Total
	9	10	11	12	
Below 31	1				1
31-41					
41-50	5	1			6
51-60	5	1			6
61-70	11	2	2		15
71-80	17	5	4	1	27
81-90	12	10	2	1	25
91-100	18	8	3		29
101-110	10	8	5	2	25
111-120	12	5	5	6	28
121-130	4	14	9	7	34
131-140	2	7	8	6	23
141-150	3	5	9	9	26
151-160		1	4	8	13
161-170		3	7	5	15
171-180		1	4	3	8
181-190		1	3	5	9
191-200			4	1	5
201-210			1	1	2
Total	100	72	70	55	297
Median score	90	115	136	144	116.1

Table XXIV shows a comparison of the median scores made by the classes in Kingman high school with the O'Brien medians and the Terman medians. The O'Brien medians were based on over 15,000 pupils in the state in the six upper grades. The Terman medians, according to this table, seem to be too high for the pupils of Kansas. In all cases except that of the freshman class, the Kingman medians exceed those of the O'Brien survey. As it was found that the ages of the Kingman high school exceeded those of the O'Brien survey, it would of course be probable that the larger medians are due to the percent of overageness.

Table XXIV. A Comparison of Median Scores Made on the Terman Group Test.

Medians	Grade			
	9	10	11	12
Terman	104	122	139	147
O'Brien	97	113	127	130
Kingman	90	115	136	144

This table shows, if the ability to make a good score on the Terman test indicates an ability to do passing work in school, that the average pupil in the Kingman high school should do passing work. According to O'Brien, mental test scores need not be reduced to the I.Q. ratios in order to be used. If the group is relatively homogeneous, the point scores will serve for many purposes as well as the I.Q.

ratios. It will indicate the ability of the pupil as compared to the ability of his group, but of course will not serve as an index of brightness. The I.Q. distribution by grades is shown in Table XXV. Using Terman's classification we then have the following:

Very superior intelligence	1 per cent
Superior intelligence	13.7 per cent
Normal intelligence	60.5 per cent
Dullness	20.8 per cent
Borderline	3.0 per cent
Feeble-minded	1 per cent

According to this classification, 24.8 per cent of the entire school are below normal, 60.5 per cent are normal, and 14.7 per cent are above normal intelligences.

Table XXV. Distribution of I.Q.'s by Grades.

I.Q.	Grade				Total
	9	10	11	12	
60-69	3				3
70-79	5	2	1	1	9
80-89	30	22	9	1	62
90-99	35	27	20	16	98
100-109	18	16	24	24	82
110-119	8	5	15	12	40
120-129	1		1	1	3
Total	100	72	70	55	297
Median	93.4	94.4	102.1	103.9	97.6

Table XXVI shows a comparison of the two groups of pupils, the city school, and the rural school, and the score they made on the Terman Group Test.

Table XXVI. Terman Test Scores with Reference to Pupil Origin

Grade	Median	
	Rural	City
9	90	91.5
10	116	114
11	127	141
12	142.5	148

It will be seen from the above table that there is little difference in the groups the first two years, but a marked difference the last two years. O'Brien found a significant difference in the scores made by pupils in small high schools and the pupils of large high schools. He attributed this difference to the fact that a large per cent of the pupils in the smaller high schools come from one teacher schools. Table XXVII shows a comparison of the scores with reference to sex. In three of the four classes

Table XXVII. Terman Test Scores with Reference to Sex.

Grade	Median	
	Boys	Girls
9	92	89
10	101	120
11	144.5	154
12	149	142.5

the boys have a higher median than the girls. This indicates that in the main the boys are as capable of doing good work as are the girls of the school.

Table XXVIII. Terman Test Scores with
Reference to Sex and Origin.

Grade	Median				
	All	R. Boys	R. Girls	C. Boys	C. Girls
9	90	91	95	97.5	90
10	115	98	121.5	103.5	114
11	136	145	125.5	146	135
12	144	142	143	155	142

The above table is a comparison of four different groups. In three of the four classes, the boys from the city school make the highest medians. Of course, the main value of an intelligence test is not to make group comparisons, although they are interesting and valuable to some extent. The main value of the test is to give information concerning the particular student, so that he may be better taught. He cannot be taught to best advantage unless the teacher has all the information at hand regarding that student. Intelligence tests play an important part in diagnosing difficulties and in the adaptation of the work to the needs of the pupil. The results of the test can also be used in guidance and in curriculum adjustment. Every pupil in high school should be given at least one test, and more if possible, and the results made a part of the permanent records of the school.

GRADE DISTRIBUTION OVER A PERIOD OF YEARS

This particular study was made to determine what had been the policy and method of grading in the school, as well as to determine the efficiency of work done as far as it can be determined by the grades given. The subject of grades is a much discussed question, particularly since the enrolment of schools has increased as much as it has. The small schools cannot maintain classes for different grades of students, intellectually, and consequently pupils of far varying abilities are thrown together. The question then arises with the teacher as to whether she should grade them all on a comparative basis, or grade them according to their abilities to do the work, as she understands the ability of the individual pupil. A beginning teacher usually has the idea that the only way to make pupils work is to fail them, and usually has a tendency to put her work on a college level. Many schools are now requiring the teacher to make a grade distribution chart each time grades are issued. Of course, grades will not always correspond to the normal chart, nor should they be expected to. But the making of the chart will at least show the teacher how her grades are running, and induce her to make a more critical study of the abilities of her pupils. Many schools are adopting the

policy of no failure at all, or at least as little as is absolutely necessary. This means that the duller pupil will not fail as long as he does as much as he is able, providing his attitude and school citizenship are all right.

General Distribution of Grades.

In order to get a valid distribution of grades, all of the subject grades given over a period of six years were tabulated. The grading system used is the uniform five point system used in Kansas. These grades are tabulated in Table XXIX.

Table XXIX. Distribution of Grades

Year	Number of Grades					Total
	A	B	C	D	F	
1922-23	172	303	610	298	64	1447
1923-24	166	320	564	343	48	1441
1924-25	222	390	627	500	98	1817
1925-26	203	446	630	467	73	1819
1926-27	125	334	644	387	94	1584
1927-28	106	319	635	407	42	1509
Total	994	2102	3710	2402	409	9617
Per cent	10.3	21.9	38.6	25.0	4.2	100

Over the six years a total of 9,617 grades were given. Over this period of six years, 10.3 per cent of the grades were of the highest grade. 21.9 per cent were in the second grade group, with 38.6 per cent in the average group. The "just passing" group had 25 per cent of all the grades. Over this period, however, only 4.2 per cent of the grades

had been failures. The distribution tends towards the normal distribution, with the exception that there are more A's given, and fewer failures. This would certainly be considered a small per cent of failure. The quality of the scholarship of the school might be called in question, since there are so few failures. This question could be answered, however, since on all scholarship tests over a period of years, such tests as Every Pupil Scholarship Tests, in which a comparison of the work of schools could be made, the subject medians of the school were practically always above the average median for the state, and never below the 25th percentile. It would indicate that good teaching has been done, or that the pupils are a rather selected group as compared to other schools. Perhaps there has been better guidance. Failure is very often the cause of the elimination of a pupil from school, since he becomes discouraged and quits. According to Maddix (1937), failure indicates a low type of mentality. Failure in this school should not operate as a very great factor in the elimination of students. It will always be a factor with some, however.

Distribution of Grades As to Sex.

Table XIX gives the same data as the preceeding table, except that the grades are recorded as being made by girls.

Table XXX. Distribution of Grades as to Sex.

Year	Number of Grades									
	A		B		C		D		F	
	B	G	B	G	B	G	B	G	B	G
1922-23	50	122	104	199	241	369	169	129	44	20
1923-24	76	90	109	212	252	332	142	201	27	21
1924-25	66	156	124	256	223	404	276	224	54	34
1925-26	35	168	117	329	227	403	236	231	47	26
1926-27	29	96	122	212	265	373	215	172	62	32
1927-28	16	90	102	217	252	323	218	129	20	22
Total	272	722	677	1425	1440	2270	1256	1146	254	155

and boys. This enables one to compare the scholarship of the girls and boys over the period of years. Of the 994 grades given in the first group, the girls secure 722, while the boys get 272. In the second group of grades, the girls get 1425, while the boys get 677. Of the total number of failures, 409, the girls get 155, while the boys get the larger number, 254. Of course, there are more girls in school than there are boys, so these figures are not comparable to any great extent unless reduced to per cent. Of all the grades made, 41 per cent were made by boys. Using this as the average number of boys as compared to the girls in the school, we have a basis of comparison.

Table XII.1. A Comparison of Boys' and Girls' Grades over a Period of Six Years

Boys----	41 per cent----	make 27 per cent of the A's
Girls----	59 per cent----	make 73 per cent of the A's
Boys----	41 per cent----	make 32 per cent of the B's
Girls----	59 per cent----	make 68 per cent of the B's
Boys----	41 per cent----	make 39 per cent of the C's
Girls----	59 per cent----	make 61 per cent of the C's
Boys----	41 per cent----	make 52 per cent of the D's
Girls----	59 per cent----	make 48 per cent of the D's
Boys----	41 per cent----	make 62 per cent of the F's
Girls----	59 per cent----	make 38 per cent of the F's

It will be seen from this table that the girls are consistently better students than are the boys. A larger per cent of the better grades are made by them, and a far smaller per cent of the lower grades. The boys make far more failures than do the girls. As on the intelligence test the median score for the boys was as high as the median for the girls, some other reason than intelligence must be looked for to account for the lower grades of the boys.

Distribution of Grades As to Subject Group.

In order to determine the amount and the per cent of failure in the different subject groups, all of the grades given in all subjects over a period of six years were tabulated. In this way any particular group of subjects offering more than ordinary difficulty would show up. Some subjects are supposedly more difficult than others, and the per cent of failure in these subjects would show whether the

Table XXXII. Distribution of Grades as to Subject Group

Subject Group	Grade											
	A		B		C		D		E		F	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
English	257	9.1	712	25.3	1021	36.4	639	24.2	140	5		
Mathematics	111	11.4	199	19.3	323	33.6	273	28.1	72	7.4		
History	130	9.8	233	20.5	532	37.8	400	28.4	58	4.1		
For. Language	72	14.4	97	17.4	190	36.0	118	23.6	33	6.6		
Commercial	104	7.3	249	17.6	521	41.2	431	30.4	50	3.6		
Industrial	159	12.6	312	26.1	500	39.4	261	20.6	31	2.4		
Normal Trng.	99	14.1	204	29.2	224	40.6	104	14.9	8	1.2		

pupils are being put in the proper classes according to their abilities. The subject groups, with the number of grades in each grade group, and the per cents of each, are shown in Table XXXII. Four years of English are offered in the high school, of which three are compulsory, according to state law. In this group 9.1 per cent of A's were given and 5 per cent of failures. The mathematics group consists of the three units of work ordinarily given. Although no mathematics is required for graduation, it is required for graduation in certain courses, such as the college preparatory courses. Probably 85 to 90 per cent of the first year pupils elect algebra, and then there is a steadily decreasing number in the higher classes. In this group, 11.4 per cent of the grades were A's, and there was 7.4 per cent of failure. The history group has averaged about four and one-half units, of which the student must take two. American history is compulsory for most people, and constitution for all. In this group 9.2 per cent of the grades are A's and 4.1 per cent are failures. The science group has usually been represented by four units, and always by three. These three are biology, physics, and chemistry. All students are required to take one of these before graduating. This group shows 9.5 per cent of A's and only 2.6 per cent of failure. The foreign language group consists of two years of Spanish and two years of Latin. Language is required for college

preparatory work. In this group there were 14.4 per cent of A's and 6.6 per cent of failure. In the commercial group two years of stenography and one year of typewriting are offered, together with a few other units. In this group we find 7.3 per cent of A's and 3.5 per cent of failure. In the industrial group have been classified such subjects as manual training, domestic science, and vocational agriculture. In this group there was 12.5 per cent of A's and 2.4 per cent of failure. The normal training group includes those subjects required by law. The figures for this group cover only five years, as this group, or course, has been discontinued in the school. For the five year period it shows 14.1 per cent of A's and only 1.2 per cent of failures. In the following table, the subject groups are ranked according to the per cent of failure.

Table XXXIII. Subject Rank As to Per Cent of Failure.

Subject Group	Per cent of Failure	Rank
Mathematics	7.4	1
Foreign Language	6.6	2
English	5.0	3
History	4.1	4
Commercial	3.5	5
Science	2.6	6
Industrial	2.4	7
Normal training	1.2	8

Mathematics has the highest per cent of failure, and the normal training group the lowest. As most people take some mathematics, and all are compelled to take English, it would be expected that these would rank high in the per cent of failure. The normal training group and the industrial group, which are entirely elective, show the smallest per cent of failure, although both physics and chemistry are offered. Evidently a considerable amount of selection has taken place here. No subject group shows an extraordinary amount of failures. This record may be contrasted with the record in some other schools. McCormick (1922) found the percentage of failures in the high school at La Crosse, Wisconsin, to be 11.4 per cent the first semester and 9.1 per cent the second. He found that the size of the class had little to do with the number of failures, and that teachers of greatest experience had the lowest percentage of failures, while those of the least experience had the highest. In this school science, mathematics, and Latin had the greatest per cent of failure, averaging about 11 per cent. In the School Review (1922) is an interesting article giving comparisons of the amounts of failure, part of which is a quotation from "School Topics" of Cleveland. In Cleveland 18.1 per cent of the pupils enrolled in mathematics classes failed, and 16.7 per cent of those enrolled in Latin classes

failed. In French 10.9 per cent failed; in science 12.9 per cent failed; in Spanish 11.5 per cent failed; in English 10.3 per cent failed; in commercial activities 8.9 per cent failed; in industrial activities 8.9 per cent failed. In all cases there were more boys than girls who failed. In St. Paul, the mathematics failures were 21.8 per cent of those studying the subject. The averages for eight surveys show mathematics 20 per cent, Latin 19.6 per cent, German 17.2 per cent, English 11.6 per cent, history 10.1 per cent, science 14 per cent, business subjects 9.5 per cent. This amount of failure seems very high in view of the fact that these are large schools, and large schools should have good teachers.

THE RETENTION OF HIGH SCHOOL STUDENTS

How many of the students starting in high school actually graduate? The answer to this question tells many significant things about the school. The retentive power of the school may be considered one of the measures of the success of the school. A high school which can retain a large majority of its pupils must be satisfying them to the extent that they will give up other things in order to go to school. In other words they consider schooling the essential thing. In order to answer this question with regard to

the Kingman high school, the progress of three separate classes was followed throughout the four years they remained in school. The classes which were chosen for this study were those entering in the years 1922, 1923, and 1924, and subsequently graduating in the years 1926, 1927, and 1928. The progress of each pupil was followed and tabulated. The number entering from other schools and the number lost from each class was found. The figures for these three classes were then thrown together. The resulting table gives a cross section of what happens in the four years of a group going through high school. These figures are shown in Table XXXIV. In this table no distinction is made in those "dropped", between those entering other schools, and those who do not go on to school. This information was not available.

Table XXXIV. The Retention of Students.

	Year of School				Total
	1	2	3	4	
Number starting	294				294
Added by transfer	6	21	15	9	51
Added by promotion				2	2
Added by demotion			2	10	12
Lost by promotion			2		2
Lost by demotion		1		5	6
Dropped	31	53	21	33	138
Four years and did not graduate				9	9
Graduated					204
Per Cent Graduating					56

This table shows that in the three classes under consideration a total of 339 students either started with the classes, or were added one way or another. A total of 155 students was lost from the classes, leaving a total of 204 who graduated. The second and fourth year showed the largest percentage of drops. A person not returning for the second year is considered as having dropped in that year. This seems to indicate that the largest number do not return for the second year of school, or return for a while and then quit. The large number in the fourth year dropping out may be explained partly by those who are going to have difficulty in graduating, and do not return for the last year or are dropped after they return. This would mean that the chief reason for them dropping has been failure. According to this method of reckoning, 56 per cent of those starting to school remain and graduate. Another method of reckoning is shown in the following table.

Table XXXV. The Retention of Those Starting with Classes.

Number Starting	294
Number Graduating	159
Per Cent Graduating	54
Per Cent Dropped	46

Of those who actually enroll with the beginning freshman class, 54 per cent remain and graduate after a four year period, while 46 per cent are dropped. At least one out of every two starting with the class remains with the class and graduates. This figure is practically the same as that found by O'Brien. He found that of 3002 students, 1338 or 45 per cent did not graduate. If this figure can be taken as normal for the state, then the school is average in its ability to hold its pupils.

An investigation was made as to which of the groups of pupils remain in high school the best. This investigation is based on the 294 students starting with the class. The pupils starting are divided as to their origin, and the results shown in Table XXXVI. The groups are then ranked according to the per cent of the number graduating.

Table XXXVI. The Retention of Groups of Students.

	Number Starting	Number Graduated	Per Cent Graduated
Boys	130	61	47
Girls	164	98	60
Rural Boys	63	27	43
City Boys	67	34	51
Rural Girls	79	43	54
City Girls	85	55	64
All	294	159	54

Table XXVII. Rank of Groups of Students According to Per Cent of Retention.

Group	Per Cent Retained	Rank
City Girls	64	1
All Girls	60	2
Rural Girls	54	3 ¹
All	54	3 ²
City Boys	51	5
All Boys	47	6
Rural Boys	45	7

According to this grouping the girls from the city city schools show the greatest amount of persistence in school. 64 per cent of these go through and graduate. The girls as a group are much better than the boys as a group, as only 47 per cent of all the boys graduate. The rural boys rank last of the groups, with only 45 per cent of their number graduating. Cast (1923) makes an interesting comment on the elimination of pupils from the high school. He says that one-fourth to one-third of the average high school teacher's time and about one-half of her energy are expended on pupils who ought to be dropped from school because they are mentally unfit or unwilling to put forth the proper amount of effort. He says that we should seriously begin the work of eliminating the inferior pupils from our high schools.

Causes of Elimination

The causes of elimination of students are hard to find because so many students will not give the real cause when asked, and usually a combination of causes is setting.

O'Brien in his survey tried to find the reasons for the dropping out of students, by using the reasons as given by the principal. His findings are given here.

Table XXXVIII. Analysis Pertaining to Reasons Given for Dropping out of School. (O'Brien, 1929)

The Reasons as Stated by the Principal	Freshman-Sophomore Drop-outs		
	Number of Students	Percentage of Total	Median Score Terman Test
1. Illness or Need	141	7.0	94
2. Other School or Moved	780	38.0	94
3. Disliked School or Failed	364	17.5	88
4. Married, Work, Money	490	24.0	96
5. Other or No Reason	275	13.5	88
	Junior-Senior Drop-outs		
	Number of Students	Percentage of Total	Median Score Terman Test
1. Illness or Need	25	6.0	123
2. Other School or Moved	137	31.0	133
3. Disliked School or Failed	77	18.0	109
4. Married, Work, Money	129	30.0	120
5. Other or No Reason	65	15	113

These figures show that there is much less elimination in the two upper grades. The reasons as given are, of course, open to question. Many principals are not in command of all of the facts necessary to ascribe a valid reason for withdrawal. It seems apparent, from the median scores of the groups given, that low intelligence is not the only factor in elimination. Many students with high intelligence are dropped from high school. Probably the only method for reducing this large number of drop-outs is by studying the individual cases as they come up, and trying to make more personal the contact between the pupil and the school.

THE SUCCESS OF HIGH SCHOOL GRADUATES IN COLLEGE

A large per cent of the high schools are preparing their students to go to college, but what per cent of them actually go? Of these who go, what per cent pass their work? In order to answer the above questions the records of the graduates of four classes were studied. This involved a total of 268 graduates. The lists of the graduates for four years were checked and the number of those going to college found. The registrars of the various colleges were written to and asked for a copy of the first semester record of the pupil. The first semester record alone was taken, because usually it is the most difficult of the semesters in college, and if

a student can make the proper adjustment in that year, he should be able to go through college successfully. It was more convenient also to do so, as then a greater number of pupils could be compared.

The Number and Per Cent of Pupils Going to College.

There were 268 graduates from the Kingman high school in the years 1925, 1926, 1927, and 1928. Out of this 268, a total of 69 went to college. This represented almost 26 per cent of the graduating body. Over the period of four years, more boys started to college than girls. 22.5 per cent of the girls went, while 30.6 per cent of the boys started. However, the recent years show a marked increase in the number of girls and a steady decrease in the number of boys starting. Either the girls are becoming more ambitious, or the boys less so. The figures for the four classes are shown in Table XXXIX.

Table XXXII. The Number and Per Cent of Students Going to College.

Class	Number Graduates			Number to College			Per Cent to College		
	G	B	T	G	B	T	G	B	T
1925	37	27	64	2	10	12	5.4	37.0	18.7
1926	37	27	64	4	9	13	10.8	33.3	20.3
1927	46	31	77	15	9	24	32.6	29.0	3.3
1928	40	25	65	15	5	20	37.5	21.7	31.7
Total	160	108	268	36	33	69	22.5	30.6	25.7

The High School Scholarship of Students Going to College.

To find out if these students going to college have made better scholastic records during their high school days than the pupils not going, an index for each student was figured. This was done by giving each grade made each semester a certain weight, and dividing by the number of grades received. The same system is used today in many colleges in determining honor points. An A was given a weight of 3, a B a weight of 2, a C a weight of 1, and a D a weight of 0. This done, the median index for the class was obtained, and the median index for those going to college.

Table XL. Showing the Median Index of the Class and of Those Going to College.

Year	Median	
	Class	College Going
1926	1.15	1.15
1927	1.10	1.52
1928	1.28	1.68

This data indicates that the scholarship of those going to college has been slightly better than that of the class as a group. The scholarship of the girls going is much better than that of the boys. Over a period of three years, the median index of the boys going to college was 1.06, while that of the girls was 1.75. The index for all students over this period was 1.19. Over one-third of the boys going to college had averaged less than an average grade in high school, while only 11 per cent of the girls going had less than an average grade.

The First Semester Grades.

The grades of 84 of the 89 students going to college were obtained and tabulated. Following is the distribution.

Table XLI. Distribution of First Semester Grades.

Grade	A	B	C	D	F	I
Hours	95	245	384	196	64	19
Per Cent	9.5	24.4	38.3	19.9	6.4	1.9

The incompletes are listed as incompletes, since there was no way of knowing what the final grade would be. This table shows that as far as grades are concerned, the graduates seem to hold their own with other graduates. They make almost 9 per cent of A's and only 6.4 per cent of failure. The grades made by these people in their first semester of college work were analyzed by subject group, to see if any particular group of subjects was giving especial difficulty to the graduates. All subjects taken were divided into six groups. The unclassified group contains such subjects as music, physical education, drawing and other miscellaneous subjects.

Table XLIII. The hours of College Grades by Subject.

Group	Grade					
	A	B	C	D	F	I
English	14	60	88	46	6	13
Mathematics	12	19	31	18	6	
Science	21	60	44	46	26	5
History	3	27	82	36	14	
For. language	8	10	55	18	8	
All others	37	60	84	32	5	1
	95	245	384	196	64	19

The data is also given in terms of per cents in Table XLIII.

Table XLIII. The Per Cent of College Grades by Subject.

Group	A	B	C	D	F	I
English	5.9	29.0	37.4	19.6	2.6	5.5
Mathematics	14.1	22.3	36.4	21.2	5.9	
Science	10.4	29.7	31.8	22.8	12.8	2.5
History	1.8	16.7	50.7	22.2	8.6	
For. Language	8.1	10.1	55.5	18.2	8.1	
All others	16.9	27.4	38.3	14.6	2.3	.5

From the standpoint of the number of failures, the students seem to be fairly well prepared in English. The other groups follow a normal distribution fairly well. There is a large per cent of failure in the science group, but also a large per cent of the high grades. Of this group of 64 students, 14 failed in one or more hours. Only 5 students received conditions. Nine boys accounted for 44 hours of the failures, while five girls made twenty hours of failures. This might be expected as more of the boys had gone who were poorly prepared.

CONCLUSIONS

1. Kingman County has nine secondary schools, with a combined school enrollment of 693 pupils. Approximately 47 per cent of these are enrolled in the Kingman high school.

2. Approximately 250 pupils graduate from the eighth grade each year. More girls graduate than boys.

3. Over a two year period, 24 per cent of the eighth grade graduates did not start to high school. 30 per cent of those graduating from the eight month schools of the county did not start to high school, while 18 per cent of those from the nine month schools did not start. The greatest amount of elimination took place among the girls from the rural schools.

4. 45 per cent of these graduates entered the Kingman high school, while the others were distributed over the county.

5. The two main sources of students for the high school are the city school and the rural eight month schools. Entering classes are almost evenly divided between these two groups.

6. The vocation of over 50 per cent of the parents is given as farming. Other vocations are well scattered.

7. The median age at which pupils enter the high school

is fourteen years and eleven months. Those from the rural schools average slightly younger than those from the city school. There is very little difference between the ages of boys and girls.

8. An age-grade survey of the school shows that practically two-thirds of the pupils are at normal age. 30 per cent of the pupils are over age. About 3 per cent are under age. There are fewer pupils under age in the school than is normal for the state. There is about the same per cent of overageness in the school as is found in the average state high school.

9. The median scores on the Terman Group Test of three of the four classes are above those given by O'Brien in his survey of high schools of the state. They are below the norms as set by Terman.

10. The distribution of I.Q.'s shows that of the entire school 60.5 per cent rank as normal, 14.7 per cent above normal, and 24.8 per cent below normal.

11. In three of the four classes, the boys have a higher median score on the test than the girls.

12. A grade distribution over a period of six years showed only 4.2 per cent of failure in the school. 10.3 per cent of the grades given were A's.

13. The girls consistently make better grades than the

boys. The boys, averaging 41 per cent of the school, make 62 per cent of the failures.

14. The highest per cent of failure was in the mathematics group, in which there was 7.4 per cent of failure. The normal training group had the least amount of failure.

15. Fifty-four per cent of those entering high school graduate, while 46 per cent are eliminated.

16. Twenty-six per cent of those graduating from high school enter some college. The scholarship of those going to college is better than the rest of the class. The first semester college records of those going to college showed 6.4 per cent of the hours taken were failed. Nine per cent were A grades. The boys averaged more hours of failure than the girls.

17. The school seems to be in a good condition, and comparable to the better schools of the state. Not only is it serving the immediate community, but a large territory of the county as well. It retains its students as well as other schools, but too many are eliminated. A course in practical arts and mechanics might help the boys. More attention should be given to the guidance of the rural pupils. Through its curricular and extra-curricular program, the school seems to be fitting its students to a good type of citizenship.

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