A STUDY OF ELIMINATIONS, FAILURES, AND DISTRIBUTIONS OF TEACHERS' MARKS IN CERTAIN KANSAS HIGH SCHOOLS

By

GROVER C. DOTZOUR

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Approved: F. J. Kelly

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THE PROBLEM:

The problem undertaken in this study is three-fold; first, to ascertain the variations which exist between the high schools with respect to the percentage of student eliminations, failures, and distributions of marks; second, to show likewise such variations as exist between the eight subject-groups in respect to eliminations, failures, and distributions of marks; and third, to show relative weights of the several causes of elimination and of failure as seen by the principals and teachers of the schools which reported.

(To have included in the study a comparative survey of the variations by 'years' of the high school course, namely, freshman, sophomore, junior, and senior, or the variations by 'teachers' in the same school or in different schools would have been both interesting and profitable, had it been possible. But it was clear that these phases of the study had not been borne in mind when the reports were made up, and consequently it was unsafe and impossible to include them.)

ORIGIN OF THE PROBLEM:

In March 1916 at a conference of city school superintendents and high school principals held at Lawrence, the School of Education of the University of Kansas volunteered as a part of the activity of the Bureau of School Service to assist superintendents and principals in so organizing studies which they ordinarily make periodically of their school systems that the results would be comparable from school to school and thus enhanced in value. A number of the superintendents and principals assembled took kindly to the suggestion and requested the School of Education to proceed with such actirity. Accordingly a committee consisting of Superintendent L. A. Lowther of Emporia, Superintendent M. E. Pearson of Kansas City, Kansas, and Principal A. J. Stout of Topeka, with Dean F. J. Kelly of the School of Education, as chairman, met and formulated the type of studies which it was felt might be undertaken at the close of the year 1915-16.

Four studies were agreed upon; forms 1,2,3, and 4 to cover these studies, were printed by the Bureau of School Service and sold to at cost to superintendendents who desired them. Nineteen cities in Kansas supplied the data called for on one or more of these blanks. The present study is based upon Form Number 4, copies of which are enclosed on the following line.

City _____

Date _____

Class or Classes _____

Teacher or Teachers _____

_____

High School Marks Failures and Eliminations

Form 4
City School Survey
Bureau of School Service
School of Education
University of Kansas

	Total Enrolled in Class During the Term	Number Who Dropped the Course Before End of Term	Number of Those Who Dropped Who Were Given Credit	Distribution of those who remained in the course throughout the term according to final term marks						Distribution of Group Marked "Failed or Conditioned", and Group Who Dropped the Course. Causes to be those Assigned by Teacher of the Class								
					Failed or Conditioned	Lowest Third of Scale of Marks	Middle Third of Scale of Marks	Highest Third of Scale of Marks	TOTAL		Ill Health	Absence	Indifference	Inability	Lack of Time	Use of Tobacco	Other Causes	TOTALS
				Number						Failed Group								
				Percent						Dropped Group								

INTERPRETATIONS

The object of this form is to gather data for purposes of comparing the marks given by the various teachers in the same high school, by the teachers in different high schools, by teachers of the same subject, and by teachers of different subjects. The essential thing, then, is to reduce all systems of marks to a common base. It is thought best to use three groups besides failure. It will not be difficult to distribute the marks into these three groups if the following directions are followed:

For schools using the hundred or percent method of marking:

Divide the distance from the pass mark to 100 into three equal divisions, and consider all marks falling in the first division as the "lowest third;" all marks falling in the second division as the "middle third;" and all marks falling in the third division as the "highest third." These three divisions will include marks as follows for the several pass marks:

Pass Mark	Lowest Third	Middle Third	Highest Third
60	60 to 72	73 to 86	87 to 100
65	65 to 76	77 to 88	89 to 100
70	70 to 79	80 to 89	90 to 100
75	75 to 82	83 to 91	92 to 100
80	80 to 86	87 to 93	94 to 100

For schools using a small number of marks such as P (poor) F (fair) G (good) E (excellent):

An attempt must be made to reduce to a basis of three marks above failure. Note carefully:

When three marks only are used above failure, then the matter is very simple. Place in the column marked "lowest third," those who received the lowest mark above failure; place in the column marked "middle third," those who received the middle mark; and place in the column marked "highest third," those who received the highest mark.

When four marks are used above failure, such as P, F, G, and E, then the "lowest third" is made up of all the P's and one-third of the F's; the "middle third" is made up of the remaining two-thirds of the F's and two-thirds of the G's; and the "highest third" is made up of the remaining one-third of the G's and all of the E's.

When five marks are used above failure, such as U (unsatisfactory), P. F, G, and E, then the "lowest third" is made up of all of the U's and two-thirds of the P's; the "middle third" is made up of the remaining one-third of the P's, all of the F's and one-third of the G's; the "highest third" is made up of the remaining two-thirds of the G's and all of the E's.

For purposes of this study, all "conditioned" marks will be grouped with the "failed."

Use marks for both semesters of the year where possible, combining into one group all the Greek History classes, for example, taught by a given teacher during the year. It will be worth while to combine also for further study all the classes of each teacher upon one card. Also, make up a card for the whole high school combined.

SOURCE OF DATA:

The data called for on Form 4, were furnished by thirteen cities, as follows: Anthony, Caney, Cherryvale, Emporia, Fredonia, Hays, Junction City, Kansas City, Leavenworth, Manhattan, McPherson, Osborne, and Salina. A total of 25870 subject-marks were received; that is, grades which were rendered at the close of the semester or the year, as the case might be.

These data, not having been worked up into final form previously, were turned over to me by Dean Kelly during the Summer Session of 1917. The work has been done under his guidance, and it is a very great pleasure to record my appreciation of the inspiration as well as of the suggestions and the assistance he has given.

RELIABILITY OF DATA:

It should be understood that the rendering of the data found in the study was entirely optional with the schools which reported; even more than that, in no case were the forms sent out to schools except upon their own request and purchase, after having been apprized of the aim and scope of the study. It may be taken for granted, therefore, that a genuine interest existed on the part of the schools that purchased the forms, and that this interest should lead to careful and accurate reporting of the data they sent in.

In explanation of the data, or the number of marks reported, it must be stated that some of the schools reported on the basis of the semester as the unit for which grades were rendered, while others used the entire year's work as the unit. In those schools which reported by semesters it was noted that the relative number of students eliminated from studies during the first semester was larger than that of the second semester. The reverse condition prevails in regard to the number of <u>failures</u> in the semesters respectively, viz. the proportion failing during the first semester was smaller than that of the second semester. Hence to have taken either semester's figures

alone as representative of these schools would have permitted unwarranted conclusions. The data of both semesters in these schools was therefore united to make up the report of the school for the year.

In those schools which reported by the "year", half-year subjects have not been dealt with separately, but have been united with the subjects as a whole.

Those schools maintaining more than three groups in the range of passing marks, as for instance groups A, B, C, and D, (with E or F for failure) necessarily had to arrange them into three, and instructions for so doing, it may be recalled, are given on the blanks which were distributed for securing the data. This translating was done in each instance by the schools themselves, and in view of the concrete illustrations and the explicit directions given in the blanks it is reasonable to judge that this has been done quite uniformly and correctly.

In some of the schools the report for the school was summarized by departments, and rendered by the principal; in others, individual reports were rendered by the teachers.

In assigning causes of Elimination and of Failure some teachers gave the total number dropped or failed, as the case might be, but assigned no cause.

In these instances the cases were listed under the head of 'Other Causes'. This of course increases unduly the percentage of real 'other cause' cases, but does not destroy the relative proportion assigned to the specific causes, as to ill health, indifference, et cetera.

The information asked for was reasonable, the directions were clear, and in the main were were well followed, and it is felt that the data presented in this study, and the facts exhibited, may be accepted with confidence. Table I follows.

Table I, Showing Eliminations, Failures, and Distribution of Marks by Cities, individually.

City	Total Marks Given	Number Elimin-ations	No. Rec. Cr.	Number Fail-ing	Lowest one-third	Middle one-third	Highest one-third
A	928	169	13	34	224	291	210
		% 18.2		4.5	29.5	38.3	27.2
B	984	137	5	80	202	253	311
		13.9		9.4	24.	29.9	36.7
C	1213	114	-	87	403	475	134
		9.4		7.9	36.7	43.2	12.2
D	1848	143	-	114	416	891	284
		7.7		6.7	24.4	52.2	16.7
E	3758	252	-	182	839	1680	805
		6.7		5.2	23.9	47.9	23.
F	815	64	-	42	160	271	278
		7.8		5.6	21.3	36.1	37.
G	3737	315	90	363	1164	1185	710
		8.5		10.6	34.	34.6	20.7
H	507	85	1	39	145	156	82
		16.8		9.2	34.4	37.	19.4
I	3553	363	34	462	512	1372	844
		10.2		14.5	16.	43.	26.5
J	350	41	-	28	82	123	76
		11.7		9.1	26.5	39.8	24.6
K	5700	858	124	549	1833	1414	1046
		15.		11.3	37.9	29.2	21.6
L	1418	194	-	240	381	439	164
		13.7		19.6	31.1	35.9	13.4
M	1059	169	13	88	186	362	254
		16.		9.9	20.9	40.7	28.5
Total	25870	2904	280	2308	6548	8912	5198
Av. of all		11.2		10.1	28.5	38.8	22.6

(Explanations and Interpretations follow)

Tables II and III, and Figures I-VI are derived from this table.

Explanation of the Table:

The table indicates that in city 'A' a total of 928 subject-marks were reported; 169 of this total dropped before the close of the semester or the year, as the case might be; and that of this 169 there were 13 which were awarded credit.

The four columns to the right are based on those subjects actually pursued until the close of the year or semester, considered as 100%. That is, in city A there were 34 outright subject-failures, or 4.5%; also 224 or 29.5% of those in school at the close who were ranked in the lowest one-third of the range of the scale from the lowest passing mark to the highest. For example, if the lowest passing mark were 70, it would mean that 29.5% fell in the range of 70-79 inclusive, while 291 or 38.3% fell between 80-89, and 27.7% fell between 90 and 100 inclusive.

The averages given in the last line are computed on the basis of the total subject-marks of all the schools. The table should read: the average elimination of the schools as a group was 11.2%, the average per cent of failures was 10.1--and so forth.

Interpretation of Data of Table:

Inasmuch as the schools represented in the table may be seen to fall into two very distinct types according to size, it was desired to ascertain to what extent if any there exists among the larger schools a norm different and distinct from that of the smaller schools.

Accordingly, two groups were made. Group (A) includes five schools, Salina, Manhattan, Leavenworth, Emporia, and Kansas City. Their enrolment varies according to the State Educational Directory of 1915-16, from 385 to 540, with the exception of Kansas City which is still larger in enrolment. (See closing paragraph pg 13.)

Group (B) schools, consisting of the remaining eight in number, vary in enrolment from 172 to 232, with the exception of Hays which reported less than 100 enrolled.

Table II, Showing a Comparison of the Norms of the Larger and the Smaller schools, designated Group (A) and (B), respectively.

Group	% Dropped	% Rec. cr.	% Failures	% Lowest third	% Middle third	% Highest third
A	10.9	12.5	11.1	29.2	37.6	22.1
B	11.9	3.	7.6	26.8	41.6	24.1
Av. of all	11.2	9.6	10.1	28.5	38.8	22.6
Medians of all:	11.7	.	9.2	26.5	38.3	23.

The norms obtained for these two groups are based on the total subject-marks of the schools of each group, respectively, and not on the averages of the several percentages of the schools. While they vary somewhat from the norm of the group as a whole, they are seen to approximate the latter very closely, and thus to make its acceptance for all a matter of little dispute.

The fact, that the norms of the groups taken separately do so approximate each other, clears up another question which may have arisen in the mind of the reader, concerning a possible source of error due to considering some schools on the semester and others on the 'year' basis, which, as previously stated, has been done. As shown there, it was necessary to combine both semesters' reports in order to secure a balanced report of those schools which reported by semester. In determining the norm for the group of schools as a whole, do not the larger schools, since they are the ones which reported by semester, thereby exert unwarranted weight in this matter? The possibility cannot be disputed since their already large enrolments are thus virtually doubled. The results of Table II, however, showing as they do that the norms of both groups separately are so close to that of both taken to-

gether, relieve us of concern and leave us free to accept with confidence the norm of the school as a single group.

It may be noted that the Group (B) schools fail 3½% less of their students than do the larger schools. The latter, however, suffer a smaller dropping out of their students, and even of those who do drop out, it is seen that 12.5% are awarded credits while only 3% of those dropping out in the Group (B) schools are awarded credit. The net result of the play of these three factors will be found to tend toward equalization of the conditions in the two groups, with a final net loss in the larger schools of about one and a half per cent the greater.

The curve of the Distribution of Marks of the two groups is worthy of note. In the Group (B) schools it will be seen at once to approach more distinctly the theoretical distribution of the 'Normal A' curve, than in the Group (A) schools.

The significant variations, however, it may be agreed are not between the groups, but between the schools themselves, and even between those in the same group and which are therefore almost precisely of the same enrolment, as previously shown with the exceptions of Hays and Kansas City. In

order to give to the variations the emphasis due them, the data of Table I is worked over in per cents in Tables IIIa and IIIb which follow, and later in graphical charts I to VI inclusive, grouping the schools for the sake of more pointed emphasis into the larger, Group (A) schools, and the smaller, Group (B) schools.

Let it be stated at the outset that any idea that such extreme variations as are found among the various schools should be attributed to these extremes in size of enrolment, viz., Hays and Kansas City, should be dismissed. In no case does Hays prove an extreme, hence she is a party to none of the comparisons made; and in those in which Kansas City does prove an extreme, other schools approximate her so closely as to rob her of practically all outstanding or undue significance. This is stated in order that such mental reservation as is always held when comparisons are being studied may be dispelled, and that the variations may be studied and explanations sought on other and proper grounds. The tables of percentages follow.

Table III(a). Showing variations in Group (A) or the larger schools, as expressed in percents.

City	% Dropt	% Rec. cr.	% Failures	% Lowest Third	% Middle Third	% Highest Third
I	10.2	9.4	14.5	16.	43.	26.5
K	15.	14.5	11.3	37.9	29.2	21.6
E	6.7	-	5.2	23.9	47.9	23.
L	13.7	-	19.6	31.1	35.9	13.4
G	10.2	28.6	10.6	34.	34.6	20.7

Table III(b). Showing variations in the Group (B) or smaller schools, as expressed in percents.

City	% Dropt	% Rec.cr.	% Failures	% Lowest Third	% Middle Third	% Highest Third
A	18.2	7.7	4.5	29.5	38.3	27.7
B	13.9	3.6	9.4	24.	29.9	36.7
C	9.4	-	7.9	36.7	43.2	12.2
D	7.7	-	6.7	24.4	52.2	16.7
F	7.8	-	5.6	21.3	36.1	37.
H	16.8	1	9.2	34.4	37.	19.4
J	11.7	-	9.1	26.5	39.8	24.6
M	16.	7.7	9.9	20.9	40.7	28.5

The tables should read alike. In city I 10.2% of the class enrolment was dropped, but 9.4% of those dropping studies were given credit. Of those remaining, considered as 100%, 14.5% were failed.

Table IV. Eliminations, Failures, and Distribution of Marks by Subject-Groups, all cities collectively.

Subject Group	Total Marks	Total Dropt	Number Rec.cr.	Subject Failures	Lowest Third	Middle Third	Highest Third
Eng.	5685	585	78	460	1326	2043	1271
		%10	13.	9.	26.	40.	25.
Math.	4569	582	53	580	1208	1365	843
		12.7	9.	14.6	30.3	34.	21.
Hist. & Social Sc.	3243	301	27	267	835	1202	638
		9.2	9.	9.1	28.4	30.3	21.6
Lang.	3238	401	66	330	800	974	733
		12.3	16.	11.6	,28.2	34.3	25.8
Science	3183	316	19	246	927	1137	557
		9.9	6.	8.6	32.3	39.6	19.5
Commer-cial	2625	420	-	273	687	896	349
		16.		12.4	31.2	40.6	15.8
Indus-trial	2493	254	38	138	558	964	579
		10.1	15.	6.2	24.9	43.	25.9
Nor.Tr.	834	45	4	14	207	340	228
		5.4	9.	1.8	26.2	43.1	28.8
Totals	25870	2904	285	2308	6548	8912	5198
		11.2	9.8	10.5	28.5	38.8	22.2

The table should read: a total of 25870subject-marks were given by all schools together; that 2904 of these discontinued the work before the close of the year or semester as was the case; and that of these 2904 there were 285 which were allowed credit. Of those subjects which were not dropped but were pursued throughout the year or semester, there were 2308, or 10.5% of failures; 6548 or 28.5% were ranked in the lowest one-third of the scale from passing to perfect; 8912 or 38.8% in the middle one-third, and 5198 or 22.2% in the highest one-third. The several subject-groups may be read across the page with the same meaning. Those not dropping out are considered as 100%.

(Figures VII, VIII, and IX are derived from this table.)

Table V. Eliminations. Distribution of causes in each of the schools by actual number of cases, and per cent equivalents.

School	Ill Health	Absence	Indifference	Inability	Lack of Time	Tobacco	Other Causes	Total
A	15	25	14	13	7	13	82	169
	9%	15%	8	7	4	8	49	
B	25	3	29	21	8	4	47	137
	18%	2	21	16	6	3	34	
C	7	21	36	7	15	2	26	114
	6	18	32	6	13	2	23	
D	21	16	36	21	9	10	30	143
	15	11	25	15	6	7	21	
E	15	16	131	5	40	-	45	252
	6	6	52	2	16	0	18	
F	11	34	13	5	-	-	1	64
	17	53	20	8	0	0	2	
G	77	34	14	11	3	80	98	317
	24	11	4	3	1	25	31	
H	10	11	10	11	10	3	30	85
	12	13	12	13	12	3	25	
I	62	33	50	54	20	2	142	363
	17	9	14	15	6	.6	39	
J	2	5	20	-	1	-	13	41
	5	12	49	0	2	0	32	
K	156	62	156	96	23	15	350	858
	18	7	18	11	3	2	41	
L	28	12	23	17	18	5	91	194
	14	6	12	9	9	3	47	
M	15	18	39	19	28	1	47	167
	9	11	23	11	17	1	28	
Total	444	290	571	280	182	135	1002	2904
Av. %	15.3	10	19.7	9.6	6.3	4.6	34.5	100

The table should read: school A suffered 15 cases of elimination attributed to ill health and this was 9% of the total elimination of 169 as shown in the column to the right.

Table VI, and Figures XII and XIV derived herefrom.

Table VI. Showing Distribution of Causes of Subject Elimination, all cities taken together.

Cause	No. of Cases	per cent
Ill Health	444	15.3
Absence	290	10.0
Indifference	571	19.7
Inability	280	9.6
Lack of Time	182	6.3
Use of Tobacco	135	4.6
Other Causes	1002	34.5
Total	2904	100.0

This distribution of causes of Elimination is made up from the reports of the teachers in the individual cases in which students were lost to the class, one hundred sixty high school teachers and principals reporting. It is therefore based upon the composite judgement of 160 individuals whose judgments while doubtless subject to extreme contradictions may yet in the aggregate, be assumed to be a fairly correct interpretation of causes.

The table should read: a total of 2904 discontinuances of subjects, due to withdrawal from school, was recorded. Of this number 444 or 15.3% withdrew because of Ill Health; 290, or 10.% because of absence from school or irregularity of attendence, and so forth.

Data taken from Table V.

Table VII. Failures. Distribution of causes in each of the schools, actual number of cases, and per cent equivalents.

School	Ill Health	Absence	Indifference	Inability	Lack of Time	Tobacco	Other Causes	Total
A	6	4	12	5	-	3	4	34
	17%	12%	35	15	0	9	12	
B	4	1	25	43	1	1	5	80
	5%	1	31	54	1	1	6	
C	7	10	27	33	2	-	8	87
	8	12	31	38	2	0	9	
D	6	4	44	37	13	8	2	114
	5	4	39	32	11	7	2	
E	9	27	93	14	3	9	27	182
	5	15	50	8	2	5	15	
F	-	6	14	17	4	1	0	42
	0	14	33	40	10	2		
G	25	26	94	132	3	77	6	363
	7	7	26	36	1	21	2	
H	1	3	16	14	1	-	4	39
	3	7	41	36	3	0	10	
I	15	11	170	180	16	9	61	462
	3	2	37	39	3	2	13	
J	-	2	8	2	-	1	15	28
	0	7	29	7	0	4	53	
K	35	51	107	127	16	15	198	549
	6	9	19	23	3	3	36	
L	16	22	78	90	12	10	12	240
	7	9	33	37	5	4	5	
M	1	15	39	11	10	-	12	88
	1	17	44	13	11	0	14	
Totals	125	182	727	705	81	134	354	2308
Av. %	5.4	7.9	31.5	30.5	3.5	5.8	13.3	99.9

The Table should read: school A awarded 6 failures which are 17% of the total, as shown in the column to the right, and these were felt to be due to ill health; 4 or 12% of the total as a result of absence, and altogether a total of 34, as shown in the column to the right.

(Table VIII, as well as Figures XIII and XV are based on the data of this table.)

Table VIII, Showing Distribution of Causes of Failure in subjects, all cities taken together.

Causes	Number of Cases	Percent
Ill Health	125	5.4
Absence	182	7.9
Indifference	727	31.5
Inability	705	30.5
Lack of Time	81	3.5
Use of Tobacco	134	5.8
Other Causes	354	15.3
Totals	2308	99.9

This distribution of causes of Failures, similar to the distribution of causes of Eliminations as shown in Table VI, is made up from the reports of the teachers in the individual instances in which students failed in a subject. As stated in the former table, it is therefore based upon the composite judgments which, while doubtless subject to extreme contradictions, may yet in the aggregate, be assumed to be a fairly correct interpretation of causes. Derived from Table VII.

The table should read: a total of 2308 subject-failures were awarded, that is in this many instances an individual student failed in one single study. Of this number, 125 or 5.4% failed, in the judgment of the teachers, because of ill health; 182 or 7.9% failed because of absence, 727 or 31.5% because of indifference-- and so forth.

GRAPHICAL REPRESENTATIONS

The author wishes to state that the figures or graphical representations which follow on the succeeding pages, have been drawn and lettered on a scale with reference to their possible reduction in size for plate work; hence their proportionment for inclusion in this thesis in their original form was of secondary consideration. This has been done in compliance with the request of the Dean of the department of Education.

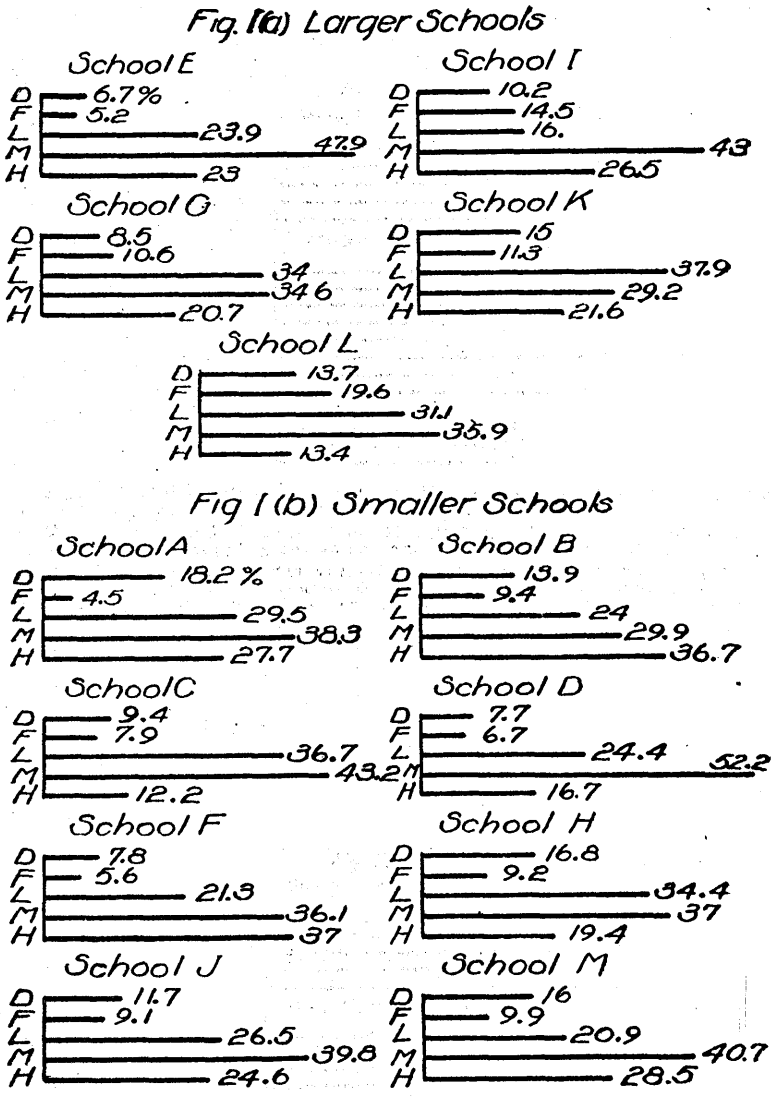

Fig. 1. **Showing Eliminations, Failures, and Distribution of Marks in each of the several schools.** All subjects in each school are taken together. Group A includes the larger schools having a minimum enrollment of 385, while Group B includes the smaller schools having a maximum enrollment of 232.

Of the lettering to the left 'D' indicates the subject was dropped, 'F' indicates failure, 'L' indicates the lowest third of the scale from passing to 100, 'M' the middle third, and 'H' the highest third in the scale. Length of lines and accompanying figures indicate percentages.

The figure should read: School E is in the group of larger schools and eliminates 6.7 per cent of its students. Of those remaining, considered as 100 per cent, 5.2 per cent are failed, 23.9 per cent are ranked in the lowest third of the scale of passing marks, 47.9 per cent in the middle third, and 23 per cent in the highest third.

Finer comparisons of the data herein recorded are given in the following graphical representations down to and including Figure number VI.

(The data of this Figure as well as of those which follow down to and including Figure number VI, are derived from Table I, which is found on page 8.)

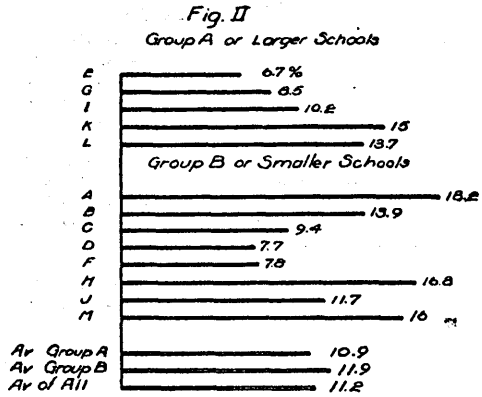

Fig. II. Elimination. Percentage, by schools, of students dropping out of class; also the average per cent. Data from Figure I.

The figure should read: School E suffered a loss of 6.7 per cent by elimination, or dropping out as compared to 15 per cent in School K.,

It may be seen that wider variations occur in the smaller sized schools, as from 7.7 per cent in school D, to 18.2 per cent in school A. These schools as a group lose 11.9 per cent of their students as compared to 10.9 per cent of the larger schools.

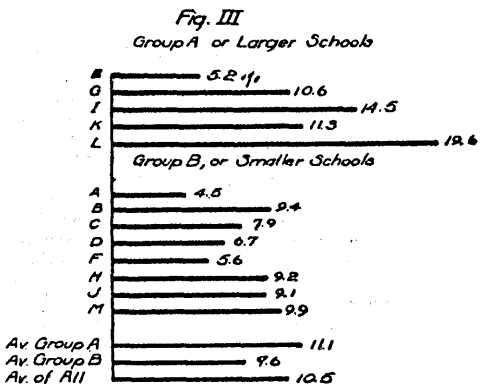

Fig. III. Subject-failures. Percentages, by schools, of failing marks which were given for the year or the semester; also average percents. Data from Figure I.

The figure should read: School E gave 5.2 per cent failing marks during the school year as compared with 19.6 in School L, and the enrollments of these schools differ but little. This means that a student in the one school has nearly 400 per cent of the likelihood of failing that he would have if he were attending the other school.

It should not be overlooked that whereas in Figure II it was the smaller schools that suffered the larger elimination, in this figure (III) it is reversed and the larger schools give an average of 11.1 per cent of failing grades as compared with an average of 7.6 per cent by the smaller schools.

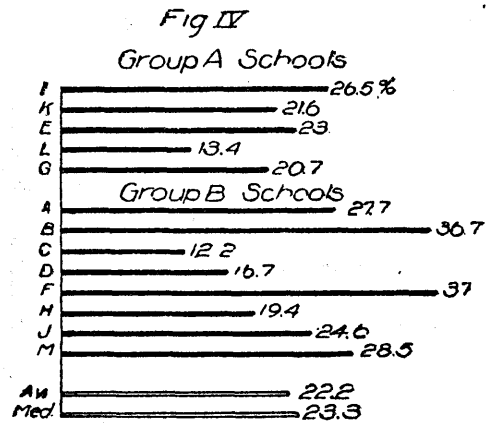

Fig. IV. **Highest Third of Marks.** Percentages by schools, of students ranked in the highest third of the scale of passing marks; also the average and the median percentages. Data from Figure I.

The figure should read: School I, one of the five larger schools, awarded its highest third of marks to 26.5 per cent of its students.

Note that in Group A a student's chances of securing the highest mark offered are twice as great in School I as in School L. Or in Group B his chances of securing the highest mark offered are over three times as great in Schools B and F as they are in School C. Data from Figure I.

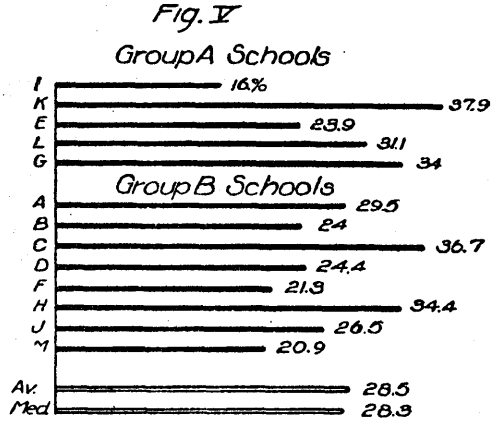

Fig. V. **Lowest Third of Marks.** Percentages by schools, of students ranked in the lowest third of the scale of passing marks; also the average and the median percents. Data from Figure I.

The figure should read: In School I of the larger schools, 16 per cent of the students were ranked in the lowest third of the scale from passing to perfect.

Note that Schools K, L, and G of Group 'A' place twice as large a percentage of their students in the lowest third of the scale as does School I. Note also that the Group 'B' schools show much less variation among themselves, and also show a closer approach to the average and to the median than do the Group 'A' or larger schools.

Fig. VI(a)

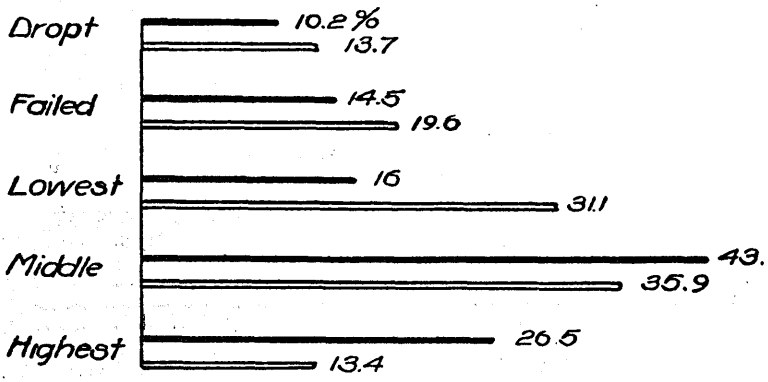

Fig. VIa. **Extreme Contrasts.** School I in the solid line and School L in the open line. Both are of the Group 'A' or larger schools, and are practically of equal enrollment. The contrasts are therefore striking. Data from Figure I.

The figure should read: School I ranks 26.5 per cent of its students in the highest third of the scale from passing to perfect, as compared to 13.4 per cent which are similarly ranked by School L.

Note the curves of the distribution of marks in the Figure are skewed in exactly opposite directions. Note also that the student's chances of being ranked in the lowest third of the scale are 200 per cent as great in School L as in School I; but his chances of being ranked in the highest third of the scale in School L are but 50 per cent as great as in School I.

Fig. VI (b)

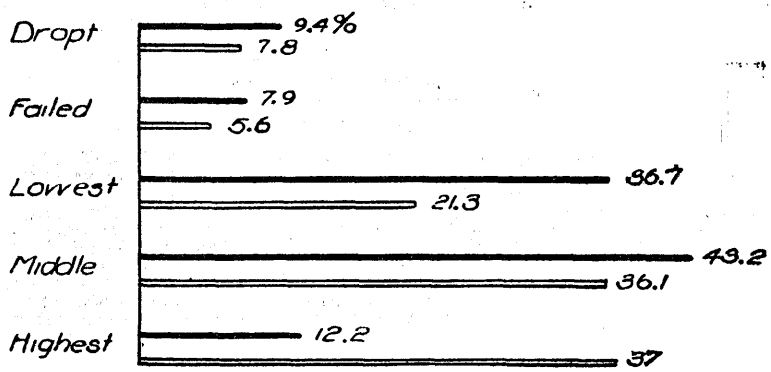

Fig. VIb. **Extreme Contrasts.** School C in the solid line and School F in the open line. These schools are of Group 'B', and are, therefore, practically of equal enrollment. Data from Figure I.

The figure should read: School C ranked 12.2 per cent of its students in the highest third of the scale as compared to 37 per cent similarly ranked by School F.

Note that here again as in Figure VIa the curves of distribution are exactly opposite. Note also, that the student's expectancy of being ranked in the highest third of the scale of passing marks in School F is 300 per cent greater than in School C.

Fig. VII

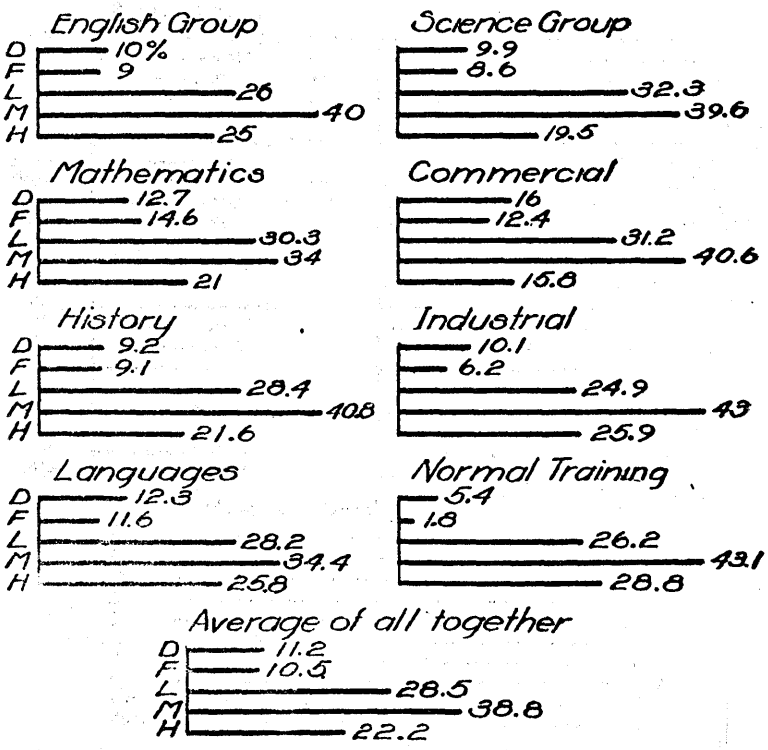

Fig. VII. Subject-groups, showing Eliminations, Failures, and Distribution of Marks, all schools combined. All subjects taught are here classified into eight groups. Data from Table IV.

The figure should read: Taking all subjects in English together, 10 per cent of the enrollment was dropped. Of those continuing the courses until the close, considered as 100 per cent, 26 per cent were ranked in the lowest third of the scale, 40 per cent in the middle third, and 25 per cent in the highest third.

The widest deviations from this somewhat 'normal A' curve are noted in the Science, Commercial and History groups.

Fig. VIII

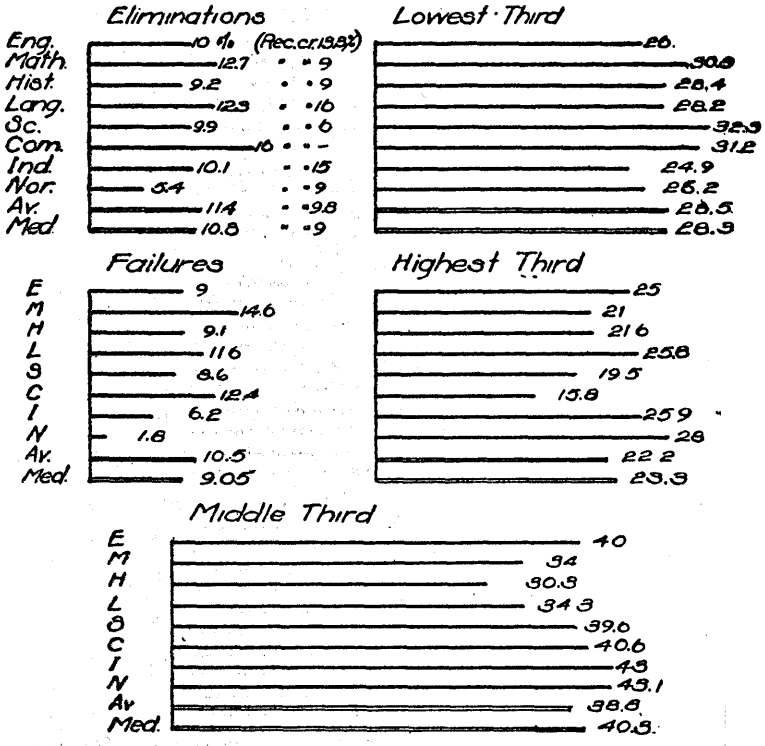

Fig. VIII. **Subject-groups.** Re-arrangement of the data of Figure VII, assembling into a more compact form the percentages of Eliminations, Failures and the Distribution of Marks in the lowest, the middle, and the highest thirds of the scale respectively. The average and the median are also given.

Mathematics is seen to be the subject-group responsible for the greatest percentage of failures, followed by the Commercial and the Language groups. It may be noted also that the so-called practical subjects of the commercial and the industrial groups suffer by elimination or dropping out as severely as the other subject-groups.

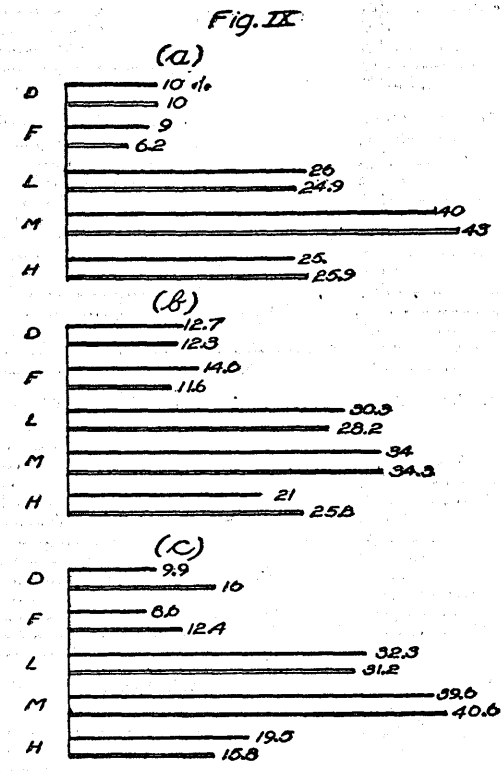

Fig. IX. **Marked Similarities, shown between certain subject-groups.** In Figure (a) the solid lines represent the English subjects and the open lines represent the Industrial subject-group. In Figure (b) the solid lines represent the Mathematics group and the open lines represent the Language group. Finally, in Figure (c) the solid lines represent the Science group and the open lines the Commercial-group subjects.

The figure should read: In (a) 40 per cent of the students in the English group were ranked in the middle third of the scale of passing marks as compared to 43 per cent similarly ranked in the group of Industrial subjects.

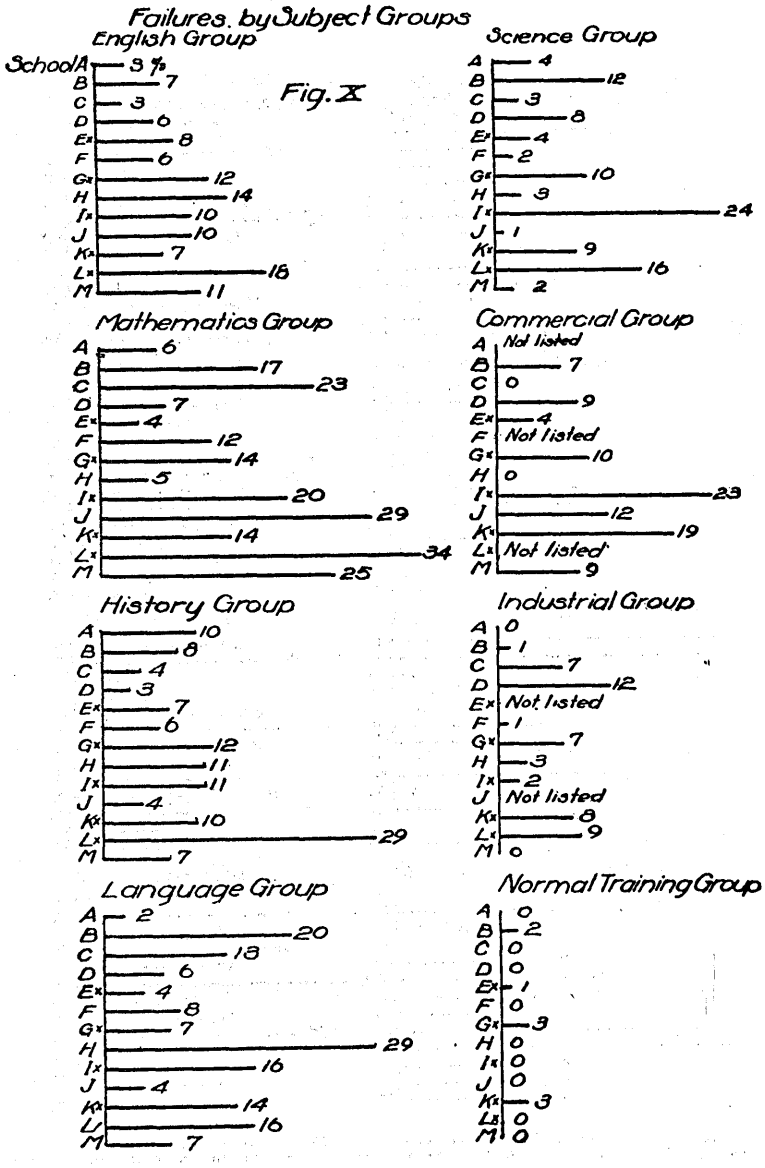

Fig. X. **Failures.** The figure shows how the schools vary among themselves in the percentages of failing grades they give in the several subject-groups.

The figure should read: In the English group for instance, School K failed 7 per cent of its students while School L failed 18 per cent and both are of the group A, or larger schools. Note that of the letters to the left, the five which designate the five larger schools are marked with a "times" sign.

In the mathematics group, School L again fails over 8 times as many students as does School E. In the History group School L fails over 4 times as many students as does School E, both of the group of larger schools.

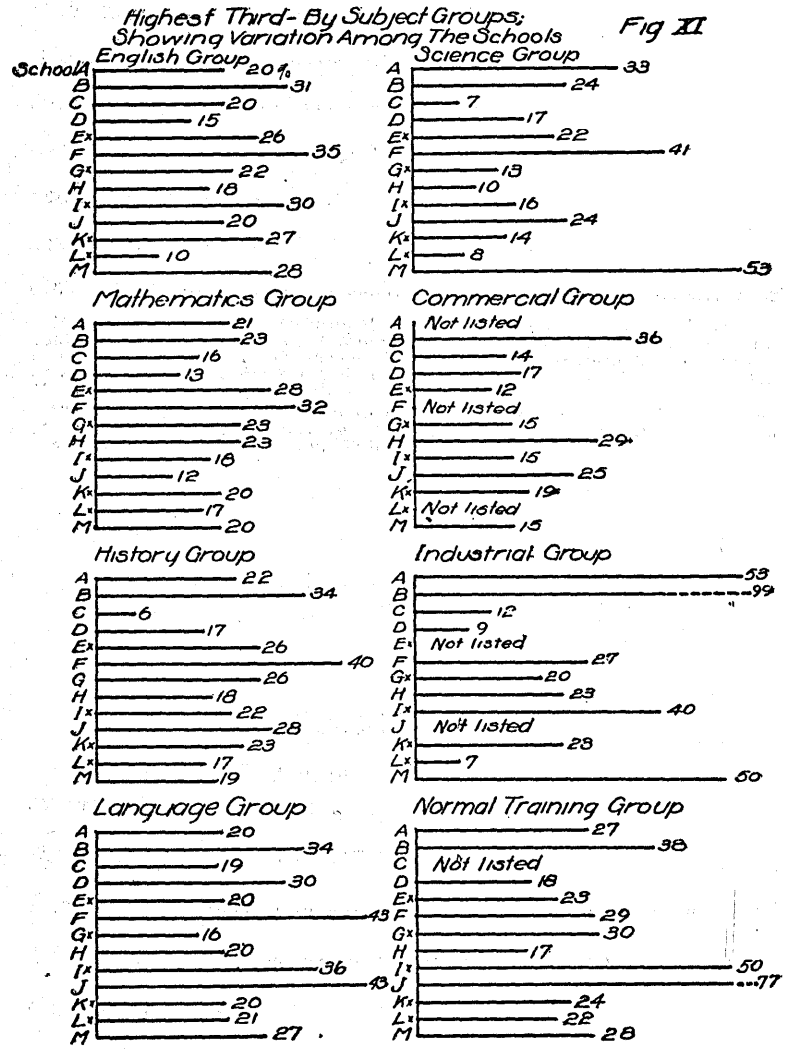

Fig. XI. **Showing how the schools vary among themselves in respect to the percentages of students ranked in the upper one-third of the scale of passing marks.** The variation is shown as found in each of the eight subject-groups.

The figure should read: In the English group, School I ranked 30 per cent of its students in the highest one-third of the scale, as compared to 10 per cent which were thus ranked by School L.

A maze of variations are noted in each of the subject-groups—widest extremes between schools of both the larger and the smaller types. In the History group it is seen that a student in School F stands over six times as much chance of being ranked in the highest third of the scale of passing marks as in School C. It may be safely stated that the widest variations exist in the smaller schools.

Fig. XII

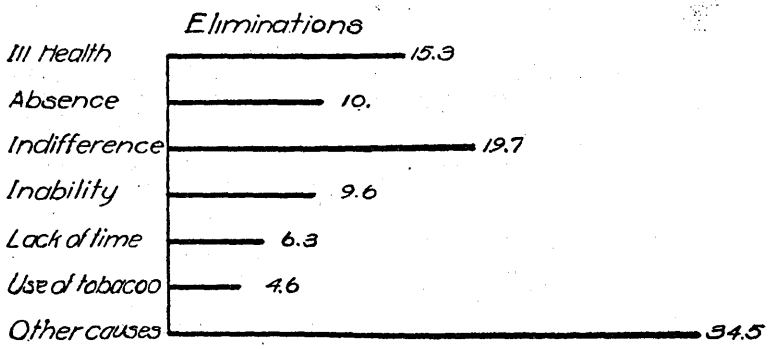

Fig. XII. **Causes of Eliminations.** Distributions expressed in per cents. Derived from the judgments of the individual teachers in cases of elimination from their classes, 2904 cases being recorded. This method of determining the distribution of causes has been mentioned on Page 17, in connection with Table V.

The table should read: Ill health has been the cause of 15.9 per cent of all eliminations, absence and consequent irregular attendance 10 per cent and so forth. Data from Table VI.

Fig. XIII

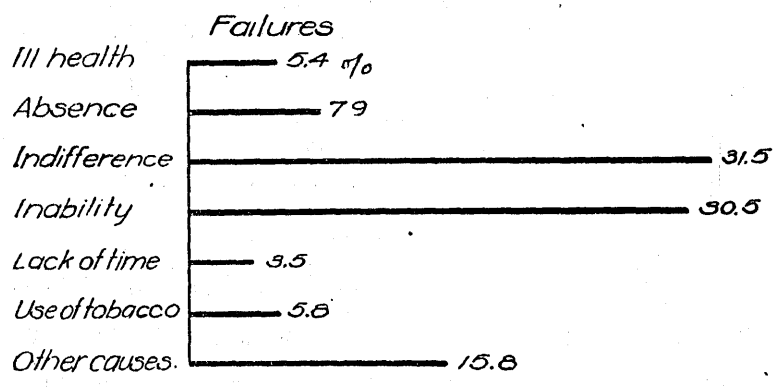

Fig. XIII. **Causes of Failures**—derived as in Figure XII, from the judgments of the teachers in the individual case, 2308 cases of subject-failures being recorded. Derived from Table VIII.

The table should read: 5.4 per cent of all failures are attributed by the teachers to ill health, 7.9 per cent to absence, 1.5 per cent to indifference, and so forth.

Note that practically one-third of all failure is attributed to indifference, and almost another third to inability. The greater study clearly would be to locate the **cause** of such indifference and inability. Each or any of the other factors may enter in, but the case has not been clear enough in the mind of the teacher to permit her to list any one of them as the prime cause of failure.

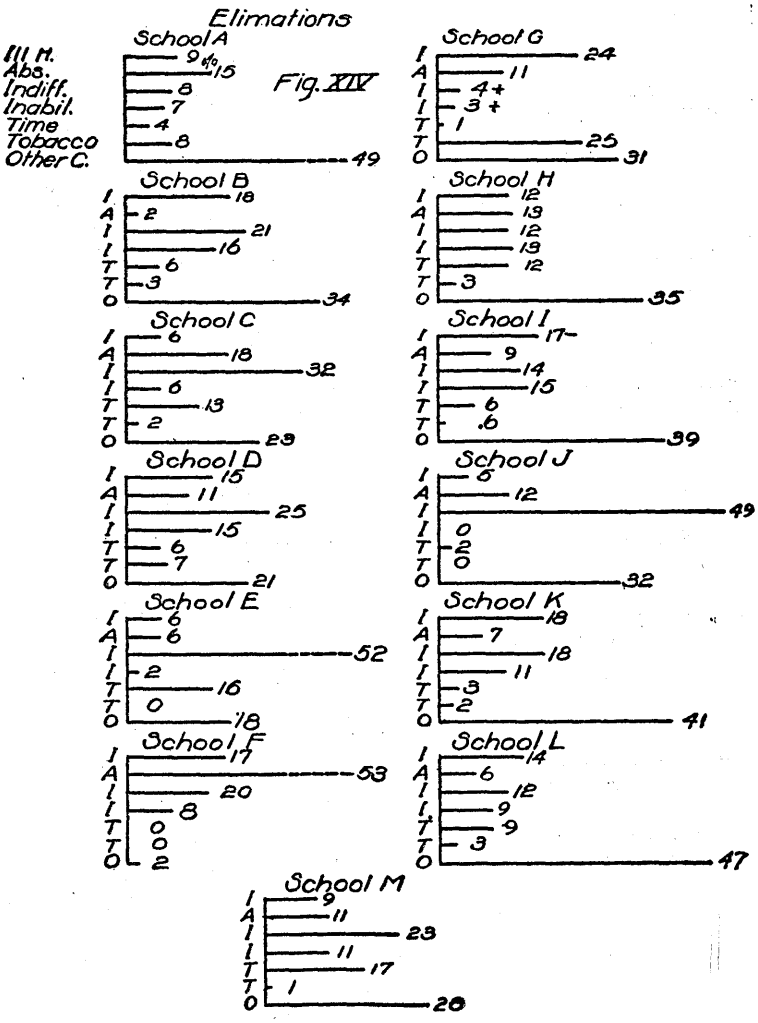

Fig. XIV. **Eliminations.** Distribution of Causes, as reported in each of the thirteen high schools. Derived from the data of Table VII.

Figure should read: In School A 9 per cent of the eliminations were deemed to be due to ill health, 15 per cent to absence, 8 per cent to indifference, and so forth. Schools, E, G, I, K, and L belong to the Group A, or larger schools.

It is interesting to note that School E reports 25 per cent of its eliminations due to indifference as compared to 4 per cent in School G in the same class of schools. On the other hand School E reports no eliminations due to the use of tobacco while School G reports 25 per cent due to this cause.

In the Group B or smaller schools School B reports 2 per cent of its eliminations due to absence, while School F attributes 52 per cent due to this cause.

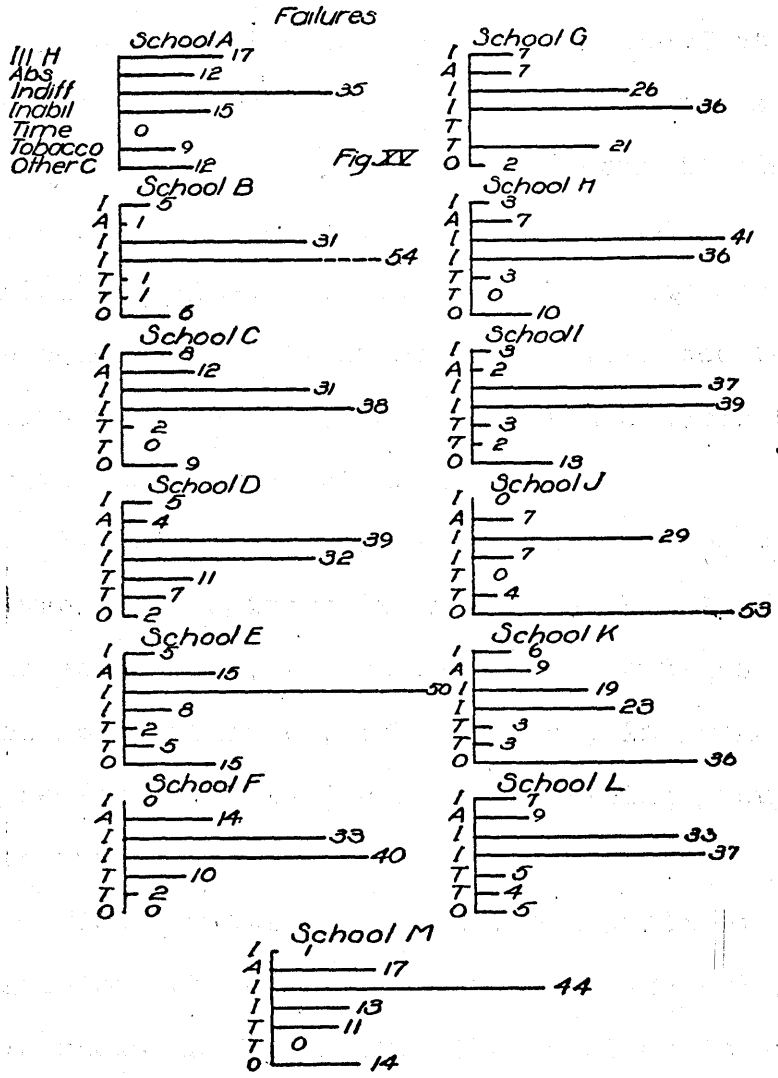

Fig. XV. **Failures,** Distribution of Causes—each of the thirteen schools shown separately. Derived from data of Table VIII.

Figure should read: School A reports 17 per cent of all subject-failures due to ill health, 12 per cent due to absence, 35 per cent to indifference, and so forth. Schools E, G. I, K, and L belong in Group A or larger schools.

Here again indifference and inability are held to be the large factors in question. Great diversity exists as usual. School J attributes 7 per cent of its failures to inability as compared to 52 per cent in School B. The question naturally arises: "To what is this inability to be attributed?" Schools E and I likewise vary in percentages attributed to inability from 8 per cent to 39 per cent. Numerous other interesting contrasts may be noted.

CONCLUDING STATEMENTS:

The data of this study reveal the fact that no uniform standard of grading exists among the high schools. The varying percentages shown in figures 2, 3, 4, and 5, can hardly be attributed to differences in intellectual capabilities of the young people of these communities; they must be attributed to differing aims and standards set up in the schools by the teachers and the school authorities.

It is shown in figure 8 that, taking the schools as a whole, no uniformity exists in the eight departments or subject-groups, in respect to percentages awarded. The range of failures, for instance, is found in figure 7 to be from 1.8% in the Normal Training group to 14.6% in the mathematics group.

Wide variation between the departments within the same school - with the notable exception of school D - is shown in figure 10. The question is suggested as to whether certain departments attract a more select group of students than others, or whether the standard in one department is not too high, or in another department, too low. An inevitable tendency to discourage students form taking up certain subjects would seem to result from such variations.

With respect to causes of elimination and failure, " indifference " is charged with the largest percentage, with " inability " second. The question as to the cause of such indifference naturally arises, but no answer is offered to it in this study. It should also be noted that the "use of tobacco " is designated as the cause of nearly one-sixth (15.8 %) of all failure.

In view of the honors, scholarships, prizes, eligibility to participation in athletic contests, membership in certain clubs and school organizations, which are often based upon the attainment of certain standards of scholarship; and in view also of the large and regretted elimination of students from the high school course, it seems very needful that much serious thought and attention should be given the system of awarding marks which is used or adopted in any school. It is hoped that the facts revealed in this study, the establishment of the norms based upon the 25,870 subject-marks reported, as well as the extreme variations exhibited, may prove food for thought and may at the same time be helpful in bringing about a more uniform and better standard of student-marking among the high schools of the state.

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