

Mortality in High School,

by

James R. Wilson

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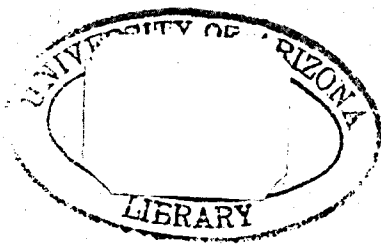
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INTRODUCTION

The Topic, "Mortality in High School", was chosen for this study because of its prominence as a vital problem in the administration of our schools of today. There appear to be two outstanding aspects of the question of mortality in high school, namely, (1) what importance shall be given to mortality as a problem, and (2) what measures and what techniques shall be adopted in an effort to solve the problem. Regarding the former aspect, while there is considerable divergence of opinion, a review of the literature reveals a general tendency on the part of educators to accept mortality as a problem to be seriously dealt with. The divergence of opinion on this phase of the question ranges from the belief that mortality is the outstanding problem in education today and no pains or expense should be spared in solving it, to the belief on the other side that many pupils entering high school have not the mental ability to succeed in high school work and should be eliminated to save taxes if for nothing else. The belief in elimination is based on the aim in secondary education which would make of the high school a selective agency, limiting its students to those who have the mental ability to master the academic work of the high school and probably go on to college. The educators who hold the belief that

mortality is a vital problem have that wider aim for secondary education which would make of the high school a great socially integrating institution. This social aim is supposed to place quite as much importance on the academic and college preparatory courses for those who can succeed in them as is placed on these by the selective aim. There is danger here, however, in acceptance of the social aim, that educators may lose sight of the needs of the bright minds among the students. With regard to the second aspect of the problem of mortality, namely, what relief measures shall be used, there is not only considerable difference of opinion but there is a great fund of suggested measures, most of which have their place and value. Though this paper deals largely with one specific phase of the problem of mortality the writer reserves the privilege of dealing with the problem as a whole when the material lends itself to an application to other phases than the one here being studied statistically.

The Problem

Assuming that mortality in high school is a problem to be dealt with, it is first necessary to learn the causes of student withdrawal in order to make an intelligent offensive in solving the problem. Many causes of student withdrawal from high school have been discovered, such as economic reasons, lack of a guidance program in the school, failure in work, lack of interest, too low mentality, wrong

home influences, poor teaching, lure of money-making job, and many others. Some of these lie outside the school and can be reached by the school only slightly and indirectly. The first concern of educators is with those factors contributing to student mortality that are inherent in the school. \ Since poor teaching, lack of interest, and low intelligence on the part of the pupil, lack of individual guidance for the pupil, limited number of curricula to care for individual differences in pupils, etc., are conditions which in some measure are responsible for student failures and low grades, the writer has elected here to deal with low grades as one of the more immediate possible factors in student withdrawal. \ The problem is stated as follows: "To discover whether or not there appears to be a significant relationship between low grades and the withdrawal of students from the Phoenix Union High School during the year 1925-'26."

It appears in the literature on the subject that educators have accepted rather generally the thesis that low grades have been a very potent factor in the elimination of students from high school. Burton¹, however, found in a study made in Des Moines and Rock Island that there was a very negligible correlation between low grades and mortality. More will be said of this later.

1 Burton, J. E., Unpublished Master's Thesis, University of Iowa, 1921.

Technique

The technique for this study has been made as simple as possible. The material was taken from the permanent record cards of the students in the Phoenix Union High School for the year 1925-'26. All grades were recorded for each student for the entire time he was in high school, up to the close of the year in question. Much other material was recorded such as merit credits, demerits, reasons for leaving school, the schools from which they entered, etc., in the hope that the scope of the study might be widened to include several of the factors of mortality instead of but one. The data were either too meager or they did not show sufficient relationship to mortality to be of use. The high school population of Phoenix is somewhat transitory owing to the changing annual influx of winter visitors, some of whom arrive late while others leave early in the spring. This situation complicates and makes a bit more difficult any statistical study of the records.

Bibliography

The bibliography used in this study is somewhat limited because of the lack of available material that has a direct bearing on the problem chosen. References will be given throughout the paper and a number of similar studies will be quoted in an effort to throw light on the problem which cannot be solved in its entirety by a statistical study alone.

Conclusions

The conclusions drawn will be based both on the graphs and tables of this study and on the results and conclusions of other similar studies.

COMPARISON OF WITHDRAWALS WITH STUDENTS IN SCHOOL.

Registration and Withdrawal Data

TABLE NO. I.

REGISTRATION OF ENTIRE HIGH SCHOOL FOR
YEAR 1925-'26.

<u>Classes</u>	<u>Boys</u>	<u>Girls</u>	<u>Total</u>
Freshmen	400	402	802
Sophomores	260	267	527
Juniors	217	204	421
Seniors	181	194	375
<u>Specials</u>	<u>35</u>	<u>25</u>	<u>60</u>
Total	1093	1092	2185

The "specials" are recorded here only because they appear thus on the records of the high school and could not well be placed within the other classes by the writer. They do not appear again in the study, however, because they are absorbed by the other four classes in all of the other records of the school. Percents in this study will be based on the total registration (2185) as shown above.

In the following table the "transfers" are those who obtained a slip from the registrar's office transferring them officially to another school. Throughout this study the term "withdrawals" refers to all students,

other than transfers, who left the school during the year 1925-'26 and also those who did not re-enter the next fall. Many of the withdrawals, to our knowledge, did enter other schools but did not have their credits mailed by the registrar to the school which they entered and thus they do not appear here as transfers.

TABLE NO. II.

STUDENT WITHDRAWALS AND TRANSFERS BY CLASSES

<u>Classes</u>	<u>WITHDRAWALS</u>			<u>TRANSFERS</u>		
	<u>Boys</u>	<u>Girls</u>	<u>Totals</u>	<u>Boys</u>	<u>Girls</u>	<u>Totals</u>
Freshmen	113	76	189	14	29	43
Sophomores	60	43	104	20	22	42
Juniors	28	41	69	5	11	16
<u>Seniors</u>	<u>15</u>	<u>17</u>	<u>32</u>	<u>8</u>	<u>15</u>	<u>23</u>
Totals	216	177	394	47	77	124

There were 39 more boys than girls among the withdrawals, which means 10 percent more were boys. While there were more girls that transferred according to the table this may simply mean that more girls took the pains to be officially transferred and not any more girls than boys went to other schools.

TABLE NO. III.

PERCENTS OF STUDENT WITHDRAWALS BY CLASSES

<u>Classes</u>	<u>Boys</u>	<u>Girls</u>	<u>Totals</u>
	<u>1</u>	<u>1</u>	<u>1</u>
Freshmen	28.2	18.9	23.6
Sophomores	23.1	16.1	19.6
Juniors	12.8	2.1	7.5
Seniors	8.3	8.8	8.5
Total	19.8	16.2	18.0

In all except the senior class there was a somewhat larger percent of boys withdrawing than girls. The percents by classes in the "total" column at the right run about as might be expected except that the senior class had a slightly higher percent of withdrawals than the junior class. There were about three times as many freshmen as senior withdrawals in terms of percents. The above percents were based on the registrations of Table No. I. Owing to the fact that the "specials" were separate from the other classes in Table No. I, there is a slight average error (less than one percent) in the percents for the classes given in Table III above, but the percents for the totals across the bottom of the table are correct because these include the "specials". Thus exactly 18.0 percent of the total registration of the high school during the year in question were withdrawals as the term is used here.

Viewed from another angle the problem presents quite another aspect. If the class totals in the right hand column of Table III are added it makes a grand total of 59.2 percent. This means that on the basis of the percents of withdrawals for the year 1925-'26, 59.2 percent of the freshmen would not remain to graduate. Even though allowance is made for those among the withdrawals who doubtless entered other schools, still the problem of mortality in Phoenix Union High School is one worthy of considerable attention if we accept the wider aim in education.

Of the total number of withdrawals from the school, the percents contributed by the various classes presents a more striking arrangement. Eaton¹ made a study in Syracuse in which he gives these percents and the following table shows a comparison with Phoenix.

TABLE NO. IV.

PERCENTS OF TOTAL WITHDRAWALS CONTRIBUTED BY THE VARIOUS CLASSES IN SYRACUSE AND PHOENIX.

<u>Classes</u>	<u>Syracuse</u>	<u>Phoenix</u>
Freshmen	52.6	45.5
Sophomores	20.4	28.9
Juniors	20.4	18.6
<u>Seniors</u>	<u>6.6</u>	<u>8.0</u>
Total	100.0	100.0

1 Eaton, H. T.: "Scholarship of Pupils Who Left School; 1920-'21 Records of Central High School, Syracuse, N.Y."; Sch. and Soc. 16:221, Aug. 19, 1922.

Over half of the withdrawals in Syracuse and nearly half in Phoenix were contributed by the freshman class. The freshman class in Phoenix represented 37 percent of the total enrollment and this 37 percent contributed 45.5 percent of the withdrawals. At the other end, the seniors represented 17.5 percent of the total enrollment and these 17.5 percent contributed but 8.0 percent of the withdrawals. Thus it is clear that the problem of mortality in these high schools lies chiefly within the freshman class. Johnson¹ found similar results in sixteen high schools (12 in Chicago, 1 in Kansas City, and 3 smaller ones in Missouri). Likewise, Dearborn² obtained the same type of results in a study in two Wisconsin cities.

Philosophy vs. Practice

Perhaps these conditions, generally speaking, are known to educators, but, as yet, little is being done about it, if the literature on the subject is a criterion of the activity in this field. Of course, administrators are introducing pupil guidance, sectioning for homogeneous groups, instituting personnel work in the faculty for a higher morale, raising the standards of teaching, enriching the curricula and programs of study, providing more extra-curricular activities for interesting the pupil, and doing many

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- 1 Johnson, Geo. R.: "Qualitative Elimination from High School"; School Rev. 18: 680-94, Dec. 1910.
 - 2 Dearborn, W. F.: "Qualitative Elimination from School"; Ill. El. School T. 10: 1-13, Sept. '09.

other things for the school as a whole. The question remains, are they doing an appreciable amount of anything specifically for the freshmen? In a review of the literature as revealed by Reader's Guide from 1900 up to the present, there was found but one study that was made with the expressed purpose of bettering the school for the freshmen, which study was made by Flint¹ in the New Rochelle high school, New York State. Many of the articles freely recognized the seat of the mortality problem as being the freshman class, but it is hoped that more is being done about it than is indicated by the literature. Perhaps one of the greatest obstacles to improvement in teaching of freshmen lies in the tendency of the most experienced and highest paid teachers in a system "gravitating" toward the upper classes. Nor is this the fault of the teachers in many cases but the fault of the administrators instead. To illustrate, suppose a superintendent of a system were to place emphasis on teaching of freshmen and place some of his best teachers here with salaries commensurate with the quality of their teaching. How long would it take for the gravitation to be reversed and directed toward the freshman class? The reversal of the emphasis toward the upper classes, unwitting or conscious, seems to have given rise to a tendency on the part of administrators to place their younger and less experienced teachers with freshmen to "break them in" to the system. No more vicious practice than this could creep in-

1 Flint, Elsie M.: "Freshman Fatalities"; Ed. Rev. 70:79-82, S '25.

to our secondary schools, viewed from the standpoint of results obtained in freshman teaching and the dangerous philosophies developed in the minds of the teachers toward freshman work, whether it be teaching, guidance, or directing extra-curricular activities of freshmen. Administrators might well follow the example of Yale in placing their best teachers with the freshman class in an effort to save as many as possible of these beginners for an education. This is but one method of improvement and many others, previously suggested, must be used but they must be applied particularly to freshmen if the problem of mortality is to be successfully solved. Individual guidance for freshmen is one of the principal avenues for holding them in school, together with a greatly enriched program of studies (courses). In the opinion of the writer, guidance can be carried on in large measure by the rank and file of the teaching staff provided it is under the direction of an expert who is giving a great deal of time to "selling" the idea of guidance to the teachers and through conferences and committee work instructing them in the methods of guidance. In the event that the district cannot provide a guidance expert it is quite possible for the principal or a member of the faculty who has qualities of leadership to make a study of guidance and plan a campaign through a committee for directing the work. In any event, guidance, to be successful, must be "directed" by some central authority, some one who is responsible for its success. Without direction and organization it will be little better than none at all.

Grades of Withdrawals

In this study, the semester grades of the students have been used, and in cases where the record was not complete for the year in question, the grades earned during the last two semesters the student was in school were used. These do not include, however, those grades earned by students in other schools and recorded in the Phoenix high school on entering.

TABLE NO. V.

DISTRIBUTION OF GRADES (MARKS) OF WITHDRAWALS FOR ALL OF THE CLASSES

<u>Grades</u>	<u>Freshmen</u>	<u>Sophomores</u>	<u>Juniors</u>	<u>Seniors</u>	<u>Total</u>
1	20	25	18	12	75
2	46	65	62	44	217
3	121	139	94	65	419
4	169	211	129	54	563
F	152	145	55	31	383
No. Gr. Earned	95	15	24	4	138

Note: All except the bottom row of figures represent the number of the various grades (marks) earned by the different classes.

The bottom row of the table represents the number of students in each class who did not remain long enough to receive a grade. The total of these (138) is 26.6 percent of all the withdrawals (518), and of these earning no grade, 95 (69 percent) were freshmen. This again points to a need for guidance for the freshmen. From a study of the term

grades and some personal knowledge of those students not earning a semester grade, the writer is convinced that if these 138 students had earned grades and they were recorded here, the last column of totals in Table V would show a much greater downward skewing than it now does. Since percents of the various grades earned by the classes can be determined only from those grades earned, the students earning no grades will be omitted from the following table.

TABLE NO. VI.

Grades	Freshmen		Sophomores		Juniors		Seniors		Total	Normal Dist.
	<u>2</u>	Cumulative	<u>2</u>	Cum.	<u>2</u>	Cum.	<u>2</u>	Cum.	<u>2</u>	<u>2</u>
1	3.9	3.9	4.3	4.3	5.0	5.0	5.8	5.8	4.5	7
2	9.0	12.9	11.1	15.4	17.3	22.3	21.4	27.2	13.1	24
3	23.8	36.7	23.7	37.4	26.3	48.6	31.6	58.8	25.3	38
4	33.2	69.9	36.1	73.5	36.0	84.6	26.2	85.0	34.0	69
F	30.1		24.6		15.4		15.0		23.1	93
<u>Total</u>	100.0		100.0		100.0		100.0		100.0	100

Note: This table includes only those withdrawals who remained long enough to earn a semester grade.

While there is downward skewing in all of the classes it is greatest in the freshman class. The so-called normal distribution as shown in the right hand column is the one used in Phoenix Union High School by the teachers as a criterion against which they check their term grades for purposes of diagnosis. There is no attempt made by the ad-

ministration of the school to have the grades conform to the normal distribution. This is shown by the following table which will be the basis for a graph on the next page.

TABLE NO. VII.

COMPARING THE DISTRIBUTIONS OF THE PERCENTS OF THE VARIOUS GRADES EARNED BY THE WITHDRAWALS, THE ENTIRE HIGH SCHOOL, AND A NORMAL DISTRIBUTION

<u>WITHDRAWALS</u>		<u>ENTIRE HIGH SCHOOL</u>	<u>NORMAL DISTRIBUTION</u>
<u>Grades</u>	<u>Percents</u> Cumulative	<u>Percents</u> Cum.	<u>Percents</u> Cum.
1	4.5 <u>4.5</u>	10.3 <u>10.3</u>	7 <u>7</u>
2	13.1 <u>17.6</u>	24.4 <u>34.7</u>	24 <u>31</u>
3	25.3 <u>42.9</u>	34.0 <u>68.7</u>	38 <u>69</u>
4	34.0 <u>76.9</u>	23.3 <u>92.0</u>	24 <u>93</u>
<u>F</u>	<u>23.1</u>	<u>8.0</u>	<u>7</u>
Total	100.0	100.0	100.0

The distribution for the entire school is flattened somewhat. It is evident from this table that the students leaving school (not transferred) are receiving considerably lower grades than those of the entire school. In the withdrawals the percent below a grade of "3" is more than three times the percent above while these percents are about even in the entire school distribution.

On the following page, graphs of the first two distributions in Table VII are superimposed upon a graph

Comparison of Grades of Withdrawals

with Those of Students in School

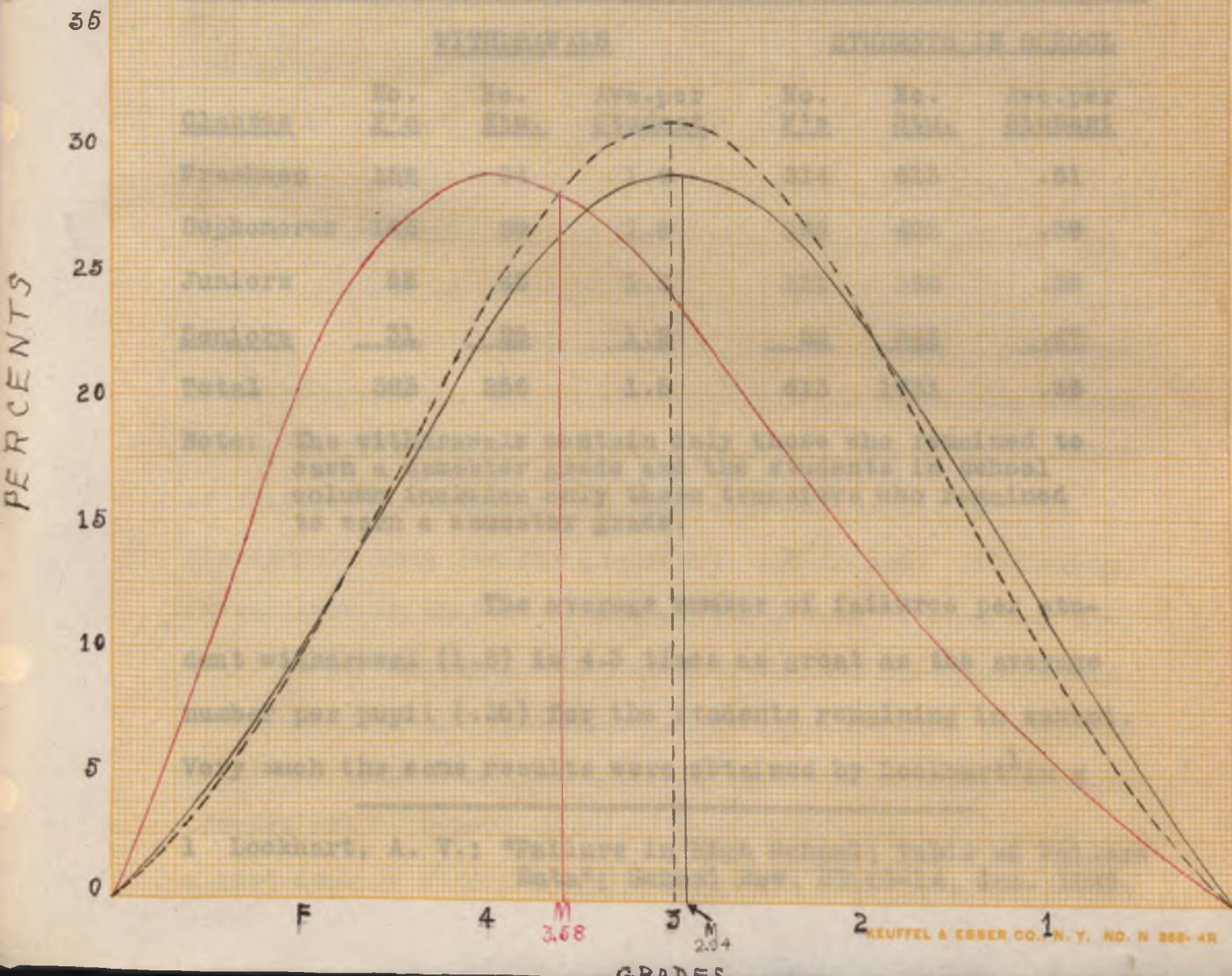
of the normal distribution. The above are compared with the distribution of the withdrawal distribution, with a test error of 0.05.

"Failures"

The grade of "F", sometimes "Failure", is worthy of special consideration in this study. It is the one outstanding low grade that carries with it the greatest amount of Withdrawals of students from the school.

— Students in School

- - - Normal Probability Curve



	WITHDRAWALS			STUDENTS IN SCHOOL		
GRADE	No.	Per. Cent.	Average	No.	Per. Cent.	Average
Failure	212	100	2.0	212	100	2.0
Freshmen	100	100	3.0	100	100	3.0
Sophomores	100	100	3.5	100	100	3.5
Juniors	100	100	4.0	100	100	4.0
Seniors	100	100	4.5	100	100	4.5
Total	500	100	3.68	500	100	2.94

Note: The withdrawal distribution is skewed to the right, with a high percentage of students failing in the first year. The distribution of students in school is more normal, with a higher average grade.

The average number of failures per pupil is 1.00, or 4.0% of the total number of students. The average number of students remaining in school is 4.00, or 80% of the total number of students. The average number of students remaining in school is 4.00, or 80% of the total number of students.

Lockhart, A. V.: "Failure in the School", Table of Statistics, 1910.

of the normal distribution. This shows the downward skewing of the withdrawal distribution, with a mean grade of 3.58.

"Failures"

The grade of "F", so-called "failure", is worthy of special consideration in this study. It is the one outstanding low grade that carries with it the greatest amount of elimination of students from the school.

TABLE NO. VIII.

DISTRIBUTION OF THE "FAILURES" (F'S) FOR WITHDRAWALS AND FOR THOSE STUDENTS WHO REMAINED IN SCHOOL

<u>Classes</u>	<u>WITHDRAWALS</u>			<u>STUDENTS IN SCHOOL</u>		
	<u>No. F's</u>	<u>No. Stu.</u>	<u>Ave. per Student</u>	<u>No. F's</u>	<u>No. Stu.</u>	<u>Ave. per Student</u>
Freshmen	152	94	1.6	314	613	.51
Sophomores	145	89	1.6	165	423	.39
Juniors	55	45	1.2	111	352	.32
<u>Seniors</u>	<u>31</u>	<u>28</u>	<u>1.2</u>	<u>23</u>	<u>343</u>	<u>.07</u>
Total	383	256	1.5	613	1731	.35

Note: The withdrawals contain only those who remained to earn a semester grade and the students in school column includes only those transfers who remained to earn a semester grade.

The average number of failures per student withdrawal (1.5) is 4.3 times as great as the average number per pupil (.35) for the students remaining in school. Very much the same results were obtained by Lockhart¹ in a

1 Lockhart, A. V.: "Failure in High School; Table of Failure Data"; School Rev. 33:13-14, Jan. 1925.

study made in the Lockport Township High School, covering a period of fourteen years from the time the school was established in 1909 to 1923. His data consist of a record of all failures made by the students enrolled during the entire period. For those students who graduated the failures were spread over a four-year period. In other words, the failures were totalled for each student during the entire time he was in the school. There were 759 enrolled in the fourteen years.

A summary of his results follows:

150 or 20 percent graduated without failures.

129 or 17 percent graduated with average of 4 failures each.

480 or 63 percent withdrew before graduation.

154 or 32 percent of the withdrawals had no failures.

326 or 68 percent of the withdrawals had an average of

4.5 failures each.

There was four times as high a percentage of withdrawals who failed as there were graduates who failed, the ratio being 68 to 17 as shown above. The average number of failures per student was only slightly higher for the withdrawals than for the graduates, 4.5 to 4.0. This study is valuable in that it covers a long period of time and appears to be complete. The failures may not have caused the elimination of the withdrawals, but the fact that there were relatively four times as many making failures among those who dropped out of school as among those who remained furnished a good deal of food for thought for the student of mortality

problems who is inclined to disregard failures as a factor in mortality. The same type of comparison is made for the Phoenix high school in the following table.

TABLE NO. IX.
DISTRIBUTIONS OF THE PERCENTS OF FAILURES FOR THE WITHDRAWALS
AND FOR THOSE STUDENTS WHO REMAINED IN SCHOOL

Classes	WITHDRAWALS			STUDENTS IN SCHOOL		
	No. En-rolled	No. Mak- ing F's	Percent making F's	No. En-rolled	No. Mak- ing F's	Percent making F's
Freshmen	94	57	60	613	175	29
Sophomores	89	55	64	423	89	21
Juniors	45	31	69	352	69	20
Seniors	28	15	54	343	15	5
Total	256	158	62	1731	348	20

Note: (See page 16.)

Relatively speaking, three times as many withdrawals made failures during the year 1925-(26 as the students remaining in school. The ratio of percents is 62 to 20, as shown in the table. The enrollment for the withdrawals includes only those who left a record while that of the students in school includes those transfers who remained long enough to make some semester grades.

Eaton's¹ study in Syracuse showed the following interesting results:

15.8 percent	of the withdrawals	were total failure.
22.6	" " "	" 75 percent failure.
18.0	" " "	" 50 percent failure.
25.6 p	" " "	" 25 percent failure.
18.0	" " "	" without failure.

Here it is seen that nearly 40 percent (38.4) of the with-

1 Eaton, H. T.: op. cit.

drawals were over 75 percent failure in their work. Stated another way by the author, the average withdrawal was failing half of his work. This study also shows that 2.7 times as many failures were made by the withdrawals per pupil as were made by the entire school, the ratio being 2.2 to .8. Terman is quoted by the author as saying that 30 percent of the students entering high school have too low an I.Q. to succeed in high school work. Johnson¹ in his study of the sixteen high schools, previously referred to, made a comparative study of the eliminating effect of four different high school subjects, namely, mathematics, English, history, and foreign language. He found little difference among them as eliminating factors, but his tables are unique and rather illuminating on this topic of mortality. Below is a summary of his findings in connection with English in tabulated form.

TABLE NO. X.

THE ELIMINATING EFFECT OF ENGLISH IN TWELVE CHICAGO HIGH SCHOOLS FOR FOUR YEARS, ON THE BASIS OF THE GRADES RECEIVED BY STUDENTS.

Grades	FIRST YEAR			SECOND YEAR		
	No. Grad- uating	No. Elim- inated	Percent Elim.	No. Grad- uating	No. Elim- inated	Percent Elim.
I	167	70	30	138	26	16
II	202	148	42	182	57	24
III	185	265	59	214	120	36
IV	121	391	76	178	173	49
V	6	257	98	7	111	94
	THIRD YEAR			FOURTH YEAR		
I	90	7	7	121	4	3
II	207	25	11	158	6	4
III	237	41	15	242	31	11
IV	198	92	32	217	48	18
V	12	48	80	2	33	94

1 Johnson, Geo. R.: op. cit.

There is a very marked increase in the percent of elimination as the grade decreases. The author concludes that there is a decided tendency toward elimination of pupils of low class standing; greatest in the lower grades of high school; and greater among boys than girls. These various studies have been quoted, not because of any lack of evidence from the study herein described for Phoenix Union High School, but they have been quoted as added evidence. The writer is well aware that it is not possible to offer conclusive proof of a thesis of this nature from statistical studies alone. Nevertheless, many studies and opinions by expert technicians in the field, have their value in the drawing of conclusions.

Thorndike¹ made an extensive study in many large city school systems throughout the United States in 1907. He gathered an immense amount of data on the basis of age, grade, and sex of the students. He found, as others have, that there was a much greater proportionate elimination of lower classmen than upperclassmen in high school and that the percent of elimination of boys was greater than (nearly twice in his study) that of girls. He states: "One main cause of elimination is incapacity for and lack of interest in the sort of intellectual work demanded by present courses of study." This study was made twenty years ago and since that time a great deal has been done to alleviate the

1 Thorndike, E. L.: Elimination of Pupils from School. U.S. Bur. of Educ. Bull. 1907, 4: 1-63.

situation regarding lack of interest on the part of students by enrichment of programs of study. The incapacity for high school work has not changed from the standpoint of the intelligence of the students but the work being done in recent years to place students in the proper curricula and in homogeneous groups by individual and group guidance programs has greatly lessened the "eliminating from school" effect of low intelligence.

A recent study made of "Freshman Fatalities" in the New Rochelle high school, New York State, by Flint reveals the conclusion that there is a very high correlation between "failures" and mortality in the freshman class. The investigator did not find any large contributing factors in mortality from without, such as economic or geographical factors, and thus decided that it was a matter of particular individual problems within the school system, the greatest being that of low grades and failures.

Several hundred high school students in New York City were tested by the Otis Intelligence Test and a study made by Clark² of intelligence as a selective agency as between the various curricula. Quoting from the author: "From the results shown in Table 7, it seems clear that, in

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- 1 Flint, Elsie, M.: "Freshman Fatalities", Educ.Rev. 70: 79-82, S. '25.
 - 2 Clark, Hugh S.: "Some Results of Psychological Tests Given to Groups of Public School Pupils of New York City"; Contributions to Education, Vol. 1, Ch. X, p. 98.

general, of those pupils who enter High School courses, those who remain in school are the ones who have the better general intelligence, as measured by such a test as the Otis." This conclusion was arrived at by comparing the average intelligence of the students (individually tested) entering the courses with the average intelligence of those graduating from these courses. The only exception to the above conclusion was found in the Dressmaking Course in which progress did not appear to be dependent on intellectual ability. The students in this course who graduated showed a slightly lower intelligence than the entering group, showing a tendency toward a downward selection, while the general course and others showed an upward selection on the basis of average intelligence. This cutting off, both at the lower and upper ends of the intelligence range by an undirected selective process, points to the great need of guidance in our schools. Guidance will tend to minimize the waste in effort on the part of the student in getting himself into the proper course by the slow and costly method of trial and error.

In Closing The Discussion

As stated at the outset, the writer is aware that statistical proof of a thesis is not all of the proof. A high correlation between low grades and failures on the one hand and student mortality on the other, does not necessarily mean a highly "significant" relationship. Other factors with perhaps a lower correlation may have

greater significance in connection with the problem of mortality. For example, lack of individual guidance in a school system, probably has a far greater significance than failures as a factor in mortality because it is a fundamental or underlying cause of mal-adjustment of pupils in the school, regardless of whether or not it causes them to drop out of school. In other, words, failures may be looked upon as an immediate cause of students leaving school, and their greatest significance lies in their indication that something may be out of adjustment in the system and need attention. Conversely, failures may be made an ally in the matter of mortality by using them as a positive factor in the elimination of those students who are mentally incapable of succeeding in high school work. Gast¹ suggests that it is time that educators adopt a plan of elimination of the "unfit" from schools in an effort to solve the problem of economic waste in public education. He would not, however, do less than is now being done for those who are capable of and desire an education.

As a close to this discussion the writer wishes to quote from Johnson² who wrote on this topic twenty years ago. His statements not only state the needs of his day but have proved prophetic of what has come to pass. The quotation is from the report of his study of the sixteen high schools previously mentioned.

1 Gast, G. C.: "Elimination of the Unfit; A Problem of Waste in Public Education", Sch. and Soc. 23:64-67, June 21, '23
2 Johnson, George R. op. cit.

"Seemingly all of these schools, however, have set up certain arbitrary standards of academic attainment and have eliminated more or less consistently a large majority of those whom they judge inferior.Nevertheless this judgment of inferiority passed upon the pupils of either sex very definitely influences elimination. Now what does this inferiority mean? Surely it does not mean necessarily a general incapacity on the part of the pupil. At most it can mean only that a pupil is not well adapted to the specified academic program. Doubtless the pupil who leaves under the pressure of this adverse judgment makes in his own mind a reciprocal criticism of the school. He has come to realize that his interests and the established program of the school do not harmonize.Perhaps if the school had greater flexibility of academic requirement, if it permitted the election of manual and industrial work more freely, if it fully provided for individual differences in interest and capacity, these very pupils who are now eliminated systematically from the lower groups would actually remain until graduation and do well."

Apparently the only outstanding factor of importance that Johnson omitted in his suggestions above was a guidance program. This is coming to be considered of prime importance today. Without guidance the present great enrichment of programs of study might become more confusing to the pupil than helpful. When guidance is based on individual intelligence tests expertly administered and wisely interpreted, checked by other intelligence tests later and by subject matter tests, other factors of improvement being equally well put into practice, then there need be little concern over the selection and elimination that takes place by high standards alone. Elimination of this sort will in the opinion of the writer only tend to make a more healthful atmosphere within the school by eliminating only those students who are of very

low intelligence, those who do not want an education, and the criminally inclined whose education should be cared for in special schools maintained for the purposes.

SUMMARY

From the Phoenix Study

1. 18 percent of the total enrollment of the high school dropped out of school during the year in question and tables show that approximately 60 percent of the freshmen do not remain to graduate. This makes a real mortality problem.

2. 3.5 percent more boys than girls, and about 3 times as high a percentage of freshmen as seniors left the school.

3. The freshman class contributed nearly half of the withdrawals while the senior class contributed but 8 percent or about one-sixth as many.

4. Of the withdrawals (exclusive of transfers) 35 percent did not remain long enough to receive a semester grade and of these nearly 70 percent were freshmen.

5. There were 3.5 times as many grades below a "3" among the withdrawals as there were above a "3".

6. The greatest downward skewing of the grade distribution of the withdrawals was in the freshman class where there were about 5 times as many grades below a "3" as above it.

7. The mean of the grades of the withdrawals was 3.58 while that of the entire school was 2.94.

8. The withdrawals made 4.3 times as many failures per student as did the students who remained in school.

9. Freshmen withdrawals made 35 percent more failures per student than senior withdrawals.

10. Over 3 times as high a percentage of withdrawals made failures as students remaining in school made.

From Other Similar Studies

1. Studies by Johnson, Thorndike, Flint, Dearborn, and Eaton reveal that there is a considerably greater percent of freshmen eliminated by low grades and failures than of upper classmen.

2. Studies by Eaton and Lockhart show that the average withdrawal fails in 50 percent or more of his work.

3. Studies by Johnson, Thorndike, Flint, Dearborn, and Eaton indicate that there is a definite tendency toward elimination due to low grades and failures.

4. Studies by Johnson, Thorndike, Flint, Eaton, Clark, Dearborn, and Lockhart show that in general withdrawals have appreciably lower grades than students remaining in school.

5. Studies by Johnson, Dearborn, and Thorndike show that more boys are eliminated than girls.

6. Conclusions of Clark, Johnson, and Thorndike prove or indicate that students remaining in school have a higher intelligence than those dropping out.

7. Percents of total enrollment that withdraw from school range from 10 percent to 18 percent while the average percent of freshmen who do not remain appears to be about 60 percent.

CONCLUSIONS.

1. Withdrawals have considerably lower grades and greater number of failures than students remaining in school, which points toward a significant relationship between low grades and mortality in high school, thus presenting a problem.

2. The principal significance of an excessive amount of low grades lies in the fact that they may be used as "symptoms" of possible mal-adjustments within the school.

3. The greatest problem of mortality in high school is with the freshman class.

4. Generally speaking, educators have a sufficiently wide aim in education to accept student mortality as a problem and attack it as such.

5. With all of the remedies for student mortality that are being used today, the one most needed in connection with the greatly enriched programs of study, appears to be individual student guidance and a program for this in the schools.

6. The modern objective testing movement has opened up new and quite remarkable possibilities for a guidance program.

7. When everything has been done within the power of school administrators to lessen student mortality without lessening educational standards of achievement, whatever selection goes on within the schools will probably be a healthful selection and should be permitted to take its course without concern on the part of educators. (See p. 24).

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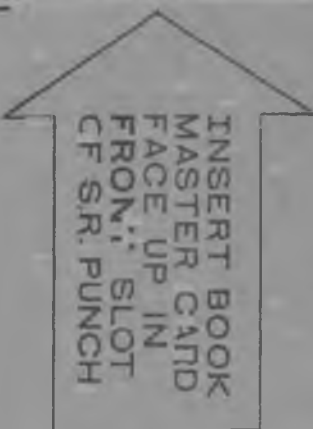
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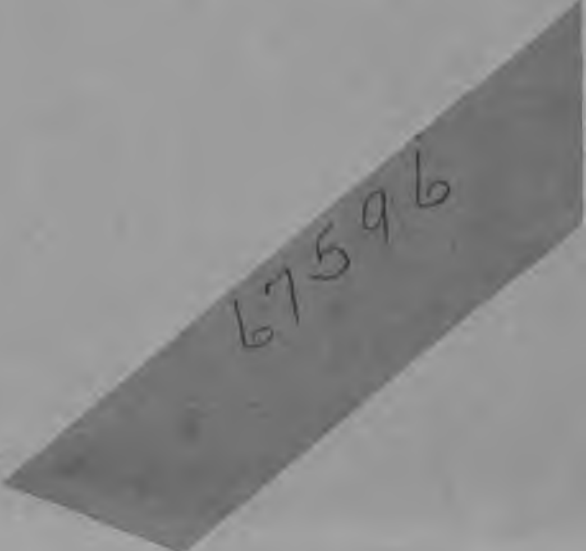


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