

THE PREDICTION OF HIGH SCHOOL SCHOLARSHIP FROM
JUNIOR HIGH SCHOOL GRADES AND MENTAL TESTS

by

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THE PREDICTION OF HIGH SCHOOL SCHOLARSHIP FROM JUNIOR HIGH SCHOOL GRADES AND MENTAL TESTS

One of the most important problems in public school administration is the classification of pupils. Through years of refinement we have today a system of grades, by use of which the advance of pupils in the realm of knowledge is scaled. The content of the curriculum and minimum requirements are pretty well established and standardized from kindergarten to the sixth grade. Beginning in the junior high school we find a varied program with an enriched curriculum in which to adjust the child. It is here that we begin to recognize individual differences and abilities, and slowly but surely the individual merges from the group. By the time the senior high school is reached, we have an individual with clear set tendencies, some special abilities appearing, and with general intelligence levels well established and easily and quickly measured.

It is here that scientific experimental education is fast eliminating the deep seated and blind faith that anything is possible in any child. We are fast finding that as the individual varies in physical and social abilities and traits he varies also in mental capacities. Statistical

methods have opened the door, not only to profitable measurement and evaluation of these abilities and traits but, what is more important, to a fair estimate of their effect on future possibilities. Just as the physician knows what to prescribe and what results to expect, so the educational expert may measure, diagnose and prescribe and hope to get suitable results in the field of education.

High school principals or student advisors are called upon to give counsel and guidance in the choice of courses, amount of work to attempt and extra curricular activities in which the pupils may successfully participate. The first question every advisor has in mind is the general ability of the individual under consideration. If in some way he could have before him the scholastic standing of the child for the 3 or 4 years just ahead, in high school, he could wisely advise and guide him in his choice of subject matter and amount of work to attempt. It was to establish a dependable criterion for administrators to use in effective sectioning of classes, weighting of assignments and regulation of extra curricular activities that this study was attempted.

ACKNOWLEDGMENT

I am especially indebted to Doctor J. C. Peterson who for a period of years, has continually pressed the claims of

higher education upon me. His counsel, guidance, encouragement and supervision have been invaluable to me and can only be matched by the encouragement and sacrifice of my beloved wife. The counsel of Doctor W. H. Andrews in the statistical procedure of this study was especially valuable and very much appreciated. Credit is also due Mr. Oliver B. Reed from whose study the Peterson Uniform Test of Mental Performance* scores used in this study were taken. I wish also to acknowledge my obligation to Mr. H. Leigh Baker, principal of Manhattan High School, for his co-operation in furnishing the scholastic standings and the Terman Intelligence Quotients used herein.

MATERIAL AND METHOD

The plan used in this bit of research was one of statistical method. The best weighting of junior high school average grades, intelligence quotients, determined by Terman Group Test of Mental Abilities and scores made during second 15 minute period of Peterson Uniform Test of Mental Performance for prediction of high school grades, was found by partial correlations and regression formulas.

* This test was first published under the title of A Uniform Test of Intelligence, but the term intelligence has since been replaced by the less presumptive term, mental performance.

One hundred six cases, fifty-seven girls and forty-nine boys who had taken grades 7, 8, 10 and 11 in the Manhattan schools and who had taken the Terman Group Test of Mental Abilities and the Peterson Uniform Test of Mental Performance, were available for the study. The intelligence quotients from the Terman test were taken from the record in the Manhattan High School. The Peterson Uniform Test of Mental Performance scores were those found by Oliver B. Reed, in a study, which he conducted during the school year 1927-1928. The scholastic grade averages were compiled by the author from the record of each case from the permanent records of the Manhattan High School.

The junior high school field was divided into four divisions and the senior high school into six divisions of learning. The English group included Rhetoric, Composition, Shorthand, Newspaper and all forms of English taught in regular school classes. Mathematics included Bookkeeping and Arithmetic. Social Science included Psychology, Normal Training, Sociology, Economics, History, etc. Science included Physical, Biological, and Elementary Science. Manual and Vocational Arts included only those subjects with motor and manipulative activity. Credits made in Athletics, Physical Education, Band, Orchestra, Glee Club, Dramatics

and all extra curricular and home work were eliminated from this study because no standard of grading functions in such courses. Only work in which the minimum credit was $\frac{1}{2}$ unit or more was used. This grouping of the field of study was done so that the problem might be continued at some future time in forecasting success in special fields in high school.

The Manhattan High School used the five grade system, I, II, III, IV and F. In order that the grading might be comparable with other studies that have been made and that any correlation that might be found would be positive, the grades were weighted as follows:

I is equal to 5 points per semester

II is equal to 4 points per semester

III is equal to 3 points per semester

IV is equal to 2 points per semester

F is equal to 1 point per semester.

The permanent record of each case used was carefully recorded on the tabulation sheet according to the field of knowledge and weighting of grades. The total credits and points were computed and recorded. The number of points in each field was divided by the number of credits in that field, which gave the average for the field. All were carried out to two decimal places and totaled and averaged

for each school.

TABULATION SHEET

Case Number _____ Name _____

Sex _____ Age _____ Classification _____

Junior High School Record

No. 2

English

Grade:Credits:Points

I : X 5: _____

II : X 4 _____

III : X 3 _____

IV : X 2 _____

F : X 1 _____

to tp p/c _____

No. 3

Mathematics

Grade:Credits:Points

I : X 5: _____

II : X 4 _____

III : X 3 _____

IV : X 2 _____

F : X 1 _____

to tp p/c _____

No. 4

Social Science

Grade:Credits:Points

I : X 5 _____

II : X 4 _____

III : X 3 _____

IV : X 2 _____

F : X 1 _____

to tp p/c _____

No. 5

Manual Arts

Grade:Credits:Points

I : X 5 _____

II : X 4 _____

III : X 3 _____

IV : X 2 _____

F : X 1 _____

to tp p/c _____

Tabulation Sheet, Continued

Senior High School Record

No. 6

English

Grade:Credits:Points

I :	X 5
II :	X 4
III :	X 3
IV :	X 2
F :	X 1
tc tp	p/c

No. 7

Mathematics

Grade:Credits:Points

I :	X 5
II :	X 4
III :	X 3
IV :	X 2
F :	X 1
tc tp	p/c

No. 8

Foreign Language

Grade:Credits:Points

I :	X 5
II :	X 4
III :	X 3
IV :	X 2
F :	X 1
tc tp	p/c

No. 9

Social Science

Grade:Credits:Points

I :	X 5
II :	X 4
III :	X 3
IV :	X 2
F :	X 1
tc tp	p/c

Tabulation Sheet, Continued

Senior High School Record, Continued

No. 10

Science

Grade:Credits:Points

I :	X 5
II :	X 4
III :	X 3
IV :	X 2
F :	X 1
tc tp	p/c

No. 11

Manual & Voc. Arts

Grade:Credits:Points

I :	X 5
II :	X 4
III :	X 3
IV :	X 2
F :	X 1
tc tp	p/c

No. 15

Junior H. S. Totals

Grade:Credits:Points

I :	X 5
II :	X 4
III :	X 3
IV :	X 2
F :	X 1
tc tp	p/c

No. 16

High School Totals

Grade:Credits:Points

I :	X 5
II :	X 4
III :	X 3
IV :	X 2
F :	X 1
tc tp	p/c

Legend (tc=Total Credit
(tp=Total Points
(p/c=Average Grade

Tabulation Sheet, Continued

No. 12 Terman Group Test Score _____
 No. 13 Terman I. Q. _____ Rank _____ Quartile _____
 No. 14 Peterson Sc. _____ Rank _____ Quartile _____
 No. 15 Jr. High Av. _____ Rank _____ Quartile _____
 No. 16 Sr. High Av. _____ Rank _____ Quartile _____

When this tabulation was completed there were available for each case, Senior High School Average, Junior High School Average, Terman Intelligence Quotient and Peterson Uniform Test of Mental Performance score with the rank and quartile for each case. A compilation of these results is given in table number II.

The Product Moment Correlation, as set forth by Holsinger, in his text, "Statistical Methods for Students in Education," was calculated for each criterion with the other three variables for the zero, first, and second order and for multiple correlation, for the 57 girls and the 49 boys and for the 106 boys and girls as a group. Regression equations were written only for the entire group of boys and girls.

RESULTS

Index numbers were assigned as follows:

- | | |
|----------------------|--------------------------|
| 1. Sr. High Average. | 3. Intelligence Quotient |
| 2. Jr. High Average. | 4. Peterson Test Score |

TABLE I. CORRELATIONS

Zero Order			
Index	Boys	Girls	Boys & Girls
12	.8278	.8102	.8421
13	.3920	.7392	.5742
14	.5111	.6993	.5787
23	.4876	.8306	.6470
24	.4997	.8245	.5857
34	.3577	.6778	.5596

First Order			
Index	Boys	Girls	Boys & Girls
12.4	.7688	.5776	.7611
13.4	.2606	.5046	.3704
14.2	.2005	.0943	.1955
12.3	.7927	.5241	.7538
13.2	-.0237	.2033	.0713
14.3	.4317	.4004	.3793
23.4	.3818	.6532	.4752
224.3	.3990	.6399	.3539
23.1	.3160	.5869	.3702
24.1	.1589	.6156	.2236
34.2	.1508	-.0223	.2923
34.1	.1990	.3341	.3404

Table I, Concluded

Second Order			
Index	Boys	Girls	Boys & Girls
12.43	.7501	.3798	.7162
13.42	-.0557	.2062	.0152
14.23	.2065	.1001	.1631
23.41	.2939	.5133	.3208
24.13	.1033	.5504	.1117
34.21	.1588	-.0426	.2845

Multiple Order			
Index	Boys	Girls	Boys & Girls
1.234	.835	.818	.849
1.34	.559	.787	.653
1.23	.827	.819	.843
1.24	.835	.812	.846
2.34	.600	.904	.701

	Mean	Standard Deviation
1.	3.305	.897
2.	3.616	.901
3.	102.25	10.39
4.	69.24	25.92

Prediction Equation For Boys and Girls As One Unit

Let

X represent predicted grade in High School.

Y represent Junior High School Average.

Z represent Terman Intelligence Quotient.

N represent Equation Completion Score.

Predicting High School Grades from other three variables.

$$X = .749 Y + .000935 Z + .00435 N + .20 \pm .32$$

Predicting High School Grades from Junior High and I. Q.

$$X = .7968 Y + .0043 Z - .016 \pm .32$$

Predicting High School Grades from Junior High Grades and Equation Completion Score.

$$X = .753 Y + .00445 N + .274 \pm .32$$

Predicting High School Grades from I. Q. and Equation Completion Score.

$$X = .03111 Z + .0128 N - .762 \pm .45$$

Predicting High School Grades from Junior High Averages

$$X = .829 Y + .308 \pm .323$$

Predicting High School Grades from Terman I. Q.

$$X = .049 Z - 1.71 \pm .49$$

Predicting of High School Grades from Equation Completion Score

$$X = .01978 N + 1.935 \pm .448$$

Example of how to use the formulas.

A student made a Junior High School Grade of 3.32
 Intelligence Quotient of 103
 Equation Completion Score 53

Then $Y = 3.32$, $Z = 103$ and $N = 53$ to predict X

Use formula No. 1

$$.749 \times 3.32 = 2.486$$

$$.000935 \times 103 = .096$$

$$.00435 \times 53 = .23$$

$$C = \underline{.20}$$

$$3.01 + .32 = 3.33$$

$$- .32 = 2.69$$

Actual score in this case was -- 3.32

TABLE II. INDIVIDUAL RECORD SHOWING JUNIOR AND SENIOR HIGH SCHOOL AVERAGE GRADE, INTELLIGENCE QUOTIENT AND EQUATION COMPLETION SCORE WITH RANK AND QUARTILE FOR 106 CASES.

:Senior H. S.				:Junior H. S.				:Terman I.Q.:				:Peterson Sc.			
No.:	Ave.:	Rank :	Q	Ave.:	Rank:	Q:	I.Q:	Rank:	Q:	Score:	Rank:	Q			
* 1	:2.69:	78	: 3	:3.05:	77.5:	3:	86:	97.5:	4:	26	:103	: 4			
2	:4.19:	21	: 1	:4.37:	24	: 1:	100:	61.5:	3:	64	: 55	: 3			
3	:4.87:	6	: 1	:4.47:	22	: 1:	105:	41	: 2:	75	: 425:	: 2			
* 4	:2.77:	74	: 3	:2.22:	99	: 4:	113:	16	: 1:	93	: 205:	: 1			
* 5	:2.12:	97	: 3	:2.95:	81	: 4:	98:	67.5:	3:	54	: 745:	: 3			
* 6	:4.37:	15.5:	1	:4.73:	15	: 1:	114:	12.5:	1:	108	: 5	: 1			
* 7	:2.21:	93	: 4	:2.35:	95	: 4:	91:	90	: 4:	35	: 96	: 4			
* 8	:1.46:	106	: 4	:2.50:	92	: 4:	103:	47.5:	2:	56	: 70	: 3			
9	:5.00:	1.5:	1	:4.63:	19	: 1:	111:	22	: 1:	102	: 95:	: 1			
*10	:3.87:	30	: 2	:4.30:	29	: 2:	117:	7.5:	1:	74	: 445:	: 2			
*11	:4.69:	9.5:	1	:4.69:	16	: 1:	112:	19	: 1:	90	: 26	: 1			
*12	:2.25:	91.5:	4	:3.00:	79.5:	3:	108:	34.5:	2:	50	: 805:	: 3			
*13	:2.75:	76	: 3	:3.35:	68	: 3:	107:	37.5:	2:	73	: 465:	: 2			
14	:4.87:	6	: 1	:4.90:	5.5:	1:	114:	12.5:	1:	99	: 14	: 1			
15	:3.06:	64	: 3	:3.53:	61	: 3:	101:	56	: 3:	28	: 101	: 4			
16	:4.02:	23	: 1	:4.63:	19	: 1:	98:	67.5:	3:	44	: 88	: 4			
*17	:1.92:	99	: 4	:2.35:	95	: 4:	97:	73	: 3:	60	: 61	: 3			

*Boys

TABLE II, Continued

:Senior H. S.:		:Junior H. S.:		:Terman I.Q.:		:Peterson Sc.:						
No.:	Ave.:	Rank	:Q:	Ave.:	Rank	:Q:	I.Q.:	Rank	:Q:	Score:	Rank	:Q:
*18	:2.90:	70	:3:	:4.06:	39	:2:	:100:	61.5:	3:	81	:34	:2
	:	:	:	:	:	:	:	:	:	:	:	:
19	:4.27:	19	:1:	:4.80:	11.5:	1:	:110:	27	:2:	90	:26	:1
	:	:	:	:	:	:	:	:	:	:	:	:
20	:3.91:	28	:2:	:4.45:	23	:1:	:113:	16	:1:	53	:77	:3
	:	:	:	:	:	:	:	:	:	:	:	:
21	:4.90:	3.5:	1:	:4.80:	11.5:	1:	:112:	19	:1:	82	:31	:2
	:	:	:	:	:	:	:	:	:	:	:	:
22	:4.90:	3.5:	1:	:4.90:	5.5:	1:	:122:	1	:1:	136	:1	:1
	:	:	:	:	:	:	:	:	:	:	:	:
23	:3.65:	34	:2:	:3.95:	42.5:	2:	:110:	27	:2:	58	:67	:3
	:	:	:	:	:	:	:	:	:	:	:	:
*24	:3.63:	36.5:	2:	:3.76:	48.5:	2:	:118:	3.5:	1:	76	:40.5:	2
	:	:	:	:	:	:	:	:	:	:	:	:
25	:1.88:	100	:4:	:2.63:	89	:4:	:79:	104	:4:	19	:105	:4
	:	:	:	:	:	:	:	:	:	:	:	:
26	:2.88:	71	:3:	:4.63:	19	:1:	:98:	67.5:	3:	74	:44.5:	2
	:	:	:	:	:	:	:	:	:	:	:	:
27	:4.14:	24	:1:	:4.21:	32	:2:	:104:	43.5:	2:	45	:86	:4
	:	:	:	:	:	:	:	:	:	:	:	:
28	:2.87:	72.5:	3:	:2.63:	89	:4:	:88:	95	:4:	48	:83	:4
	:	:	:	:	:	:	:	:	:	:	:	:
*29	:3.44:	47	:2:	:3.73:	50	:2:	:114:	12.5:	1:	59	:64.5:	3
	:	:	:	:	:	:	:	:	:	:	:	:
*30	:3.58:	40	:2:	:4.35:	25	:1:	:110:	27	:2:	95	:18.5:	1
	:	:	:	:	:	:	:	:	:	:	:	:
*31	:2.44:	87	:4:	:2.84:	83.5:	4:	:101:	56	:3:	59	:64.5:	3
	:	:	:	:	:	:	:	:	:	:	:	:
*32	:3.47:	45	:2:	:3.53:	61	:3:	:110:	27	:2:	93	:20.5:	1
	:	:	:	:	:	:	:	:	:	:	:	:
33	:2.20:	94	:4:	:3.37:	66.5:	3:	:89:	94	:4:	32	:99	:4
	:	:	:	:	:	:	:	:	:	:	:	:
*34	:2.47:	85.5:	4:	:3.32:	70	:3:	:109:	32	:2:	104	:7	:1
	:	:	:	:	:	:	:	:	:	:	:	:
*35	:3.29:	56	:3:	:3.94:	44.5:	2:	:110:	27	:2:	97	:16.5:	1
	:	:	:	:	:	:	:	:	:	:	:	:
*36	:2.56:	81	:4:	:4.00:	40	:2:	:104:	43.5:	2:	100	:13	:1

*Boys

Table II, Continued

:Senior H. S.::			:Junior H. S.::			:Terman I.Q.::			:Peterson Sc.			
No.:	Ave.:	Rank	Q::	Ave.:	Rank	Q::	I.Q.:	Rank	Q::	Score:	Rank	Q
37	:4.70:	8	:1::	:4.90:	5.5:	:1::	:117:	7.5:	:1::	133	:2	:1
*38	:3.63:	36.5:	:2::	:3.94:	44.5:	:2::	:92:	86.5:	:4::	92	:22	:1
*39	:2.00:	98	:4::	:3.53:	61	:3::	:90:	92.5:	:4::	49	:82	:4
40	:3.63:	36.5:	:2::	:4.00:	40	:2::	:107:	37.5:	:2::	81	:34	:2
41	:3.13:	60.5:	:3::	:4.00:	40	:2::	:97:	73	:3::	65	:54	:3
42	:4.47:	13	:1::	:4.60:	21	:1::	:120:	2	:1::	63	:56.5:	:3
*43	:3.13:	60.5:	:3::	:3.56:	58.5:	:3::	:85:	99.5:	:4::	113	:4	:1
*44	:3.50:	42.5:	:2::	:3.37:	66.5:	:3::	:95:	79.5:	:3::	80	:36	:2
*45	:3.50:	42.5:	:2::	:3.63:	52	:2::	:110:	27	:2::	71	:48.5:	:2
46	:1.80:	101	:4::	:2.00:	101.5:	:4::	:70:	106	:4::	7	:106	:4
47	:3.63:	36.5:	:2::	:3.06:	76	:3::	:75:	105	:4::	34	:97.5:	:4
48	:2.29:	90	:4::	:1.13:	106	:4::	:81:	102	:4::	29	:100	:4
*49	:3.44:	47	:2::	:3.76:	48.5:	:2::	:111:	22	:1::	53	:77	:3
*50	:1.64:	104	:4::	:2.00:	101.5:	:4::	:98:	67.5:	:3::	56	:70	:3
*51	:2.94:	67	:3::	:2.26:	98	:4::	:101:	56	:3::	46	:84.5:	:4
*52	:2.37:	88	:4::	:2.68:	86.5:	:4::	:95:	79.5:	:3::	40	:95	:4
*53	:1.77:	102	:4::	:2.00:	101.5:	:4::	:91:	90	:4::	22	:104	:4
54	:3.27:	57.5	:3::	:3.00:	79.5:	:3::	:110:	27	:2::	76	:40.5:	:2
55	:2.25:	91.5	:4::	:2.84:	83.5:	:4::	:86:	97.5:	:4::	83	:28.5:	:2

* Boys

Table II, Continued

:Senior H. S.:Junior H. S.:Terman I. Q.:Peterson Sc.												
No.:	Ave.:	Rank	:Q:	Ave.:	Rank	:Q:	I.Q.	Rank:	Q:	Score:	Rank	:Q
56	:5.00:	1.5:	1:	:4.79:	13	:1:	117:	7.5:	1:	83	:28.5:	2
*57	:2.75:	76	:3:	:2.35:	95	:4:	91:	90	:4:	60	:61	:3
*58	:3.25:	59	:3:	:2.74:	85	:4:	98:	67.5:	3:	61	:59	:3
*59	:3.50:	42.5:	2:	:3.29:	72	:3:	92:	86.5:	4:	91	:23.5:	1
*60	:4.00:	26.5:	1:	:4.32:	26.5:	2:	119:	3	:1:	91	:23.5:	1
61	:3.44:	47	:2:	:4.68:	17	:1:	117:	7.5:	1:	67	:52.5:	2
62	:1.66:	103	:4:	:1.47:	105	:4:	94:	83	:4:	41	:94	:4
*63	:3.43:	49.5:	2:	:3.47:	63.5:	3:	103:	47.5:	2:	73	:46.5:	2
*64	:2.50:	83.5:	4:	:3.32:	70	:3:	101:	56	:3:	45	:90	:4
65	:3.43:	49.5:	2:	:3.95:	42.5:	2:	102:	51.5:	2:	42	:92	:4
66	:3.86:	32	:2:	:3.10:	75	:3:	101:	56	:3:	59	:64.5:	3
67	:4.87:	6	:1:	:5.00:	2	:1:	102:	51.5:	2:	97	:16.5:	1
68	:3.27:	57.5:	3:	:3.26:	73	:3:	90:	92.5:	4:	42	:92	:4
*69	:4.00:	26.5:	1:	:4.10:	36.5:	2:	102:	34.5:	2:	44	:88	:4
70	:4.25:	20.5:	1:	:4.32:	26.5:	2:	107:	37.5:	2:	71	:48.5:	2
71	:2.75:	76	:3:	:2.52:	91	:4:	97:	73	:3:	44	:88	:4
*72	:1.58:	105	:4:	:2.47:	93	:4:	100:	61.5:	3:	70	:50	:2
73	:4.41:	14	:1:	:3.79:	46.5:	2:	100:	61.5:	3:	67	:52.5:	2

*Boys

Table II, Continued:

:Senior H. S.::			:Junior H. S.::			:Terman I. Q.::			:Peterson Sc.			
No.:	Ave.:	Rank	Q:	Ave.:	Rank	Q:	I. Q:	Rank	Q:	Score:	Rank	Q
74:	2.35:	89	:	4:	1.76:	104	:	4:	80:	103	:	4:
75:	3.75:	33	:	2:	4.21:	32	:	2:	114:	12.5:	1:	:
76:	2.64:	79.5:	3:	3.16:	74	:	3:	95:	79.5:	3:	:	50
77:	3.12:	62.5:	3:	3.79:	46.5:	2:	:	98:	67.5:	3:	:	62
78:	2.19:	95	:	4:	2.68:	86.5:	4:	95:	79.5:	3:	:	56
*79:	3.31:	54	:	3:	3.58:	56.5:	3:	113:	16	:	1:	95
80:	2.92:	68.5:	3:	3.62:	53	:	2:	96:	76	:	3:	46
81:	3.00:	65.5:	3:	3.47:	63.5:	3:	:	104:	43.5:	2:	:	56
82:	4.25:	20.5:	1:	4.31:	28	:	2:	101:	56	:	3:	82
*83:	2.64:	79.5:	3:	3.58:	56.5:	3:	:	115:	10	:	1:	63
84:	4.30:	18	:	1:	4.10:	36.5:	2:	104:	43.5:	2:	:	90
85:	3.31:	54	:	3:	3.60:	54	:	3:	92:	86.5:	4:	79
86:	2.50:	83.5:	4:	2.63:	69	:	4:	92:	86.5:	4:	:	27
*87:	2.92:	68.5:	3:	3.59:	55	:	3:	82:	101	:	4:	42
*88:	4.69:	9.5:	1:	4.88:	8.5:	1:	:	99:	64	:	3:	101
*89:	4.50:	12	:	1:	4.88:	8.5:	1:	118:	3.5:	1:	:	123
90:	4.22:	22	:	1:	4.83:	10	:	1:	107:	37.5:	2:	102
91:	3.37:	51.5:	2:	3.32:	70	:	3:	103:	47.5:	2:	:	53
*92:	4.37:	15.5:	1:	5.00:	2	:	1:	109:	32	:	2:	69

* Boys

Table II, Concluded

:Senior H. S.:Junior H. S.:Terman I.Q.:Peterson Sc.												
No.:	Ave.:	Rank	Q:	Ave.:	Rank	Q:	I.Q:	Rank	Q:	Score:	Rank	Q
93:	3.00:	65.5:	3:	4.21:	32	:2:	103:	47.5:	2:	81	:34	:2
*94:	2.53:	82	:4:	2.89:	82	:4:	95:	79.5:	3:	34	:97.5:	4
95:	2.87:	72.5:	3:	2.32:	97	:4:	85:	99.5:	4:	59	:64.5:	3
96:	3.62:	39	:2:	4.74:	14	:1:	111:	22	:1:	103	:8	:1
97:	3.31:	54	:3:	4.21:	32	:2:	109:	32	:2:	55	:73	:3
98:	4.61:	11	:1:	4.90:	5.5:	1:	107:	37.5:	2:	106	:6	:1
*99:	3.12:	62.5:	3:	3.42:	65	:3:	107:	37.5:	2:	79	:38	:2
*100:	3.37:	51.5:	2:	3.71:	51	:2:	95:	79.5:	3:	79	:38	:2
101:	2.13:	96	:4:	3.05:	77.5:	3:	97:	73	:3:	54	:74.5:	3
102:	3.87:	30	:2:	4.16:	35	:2:	97:	73	:3:	98	:15	:1
103:	3.87:	30	:2:	4.21:	32	:2:	101:	56	:3:	60	:61	:3
*104:	3.50:	42.5:	2:	3.56:	58.5:	3:	93:	84	:4:	101	:11.5:	1
*105:	4.31:	17	:1:	5.00:	2	:1:	112:	19	:1:	75	:42.5:	2
106:	2.47:	85.5:	4:	2.00:	101.5:	4:	87:	96	:4:	56	:70	:3

* Boys

Table II is a compilation of average grades for senior and junior high school, the I. Q. for the Terman test and the score for the Uniform Test of Mental Performance, with the rank and quartile for each individual case as it compared to the other 105 cases. The cases were numbered consecutively in the alphabetical order.

This table was compiled in order that any reader who might not be versed in statistical terms could see the relationships between variables in more concrete form. It also gives a good individual case study. Read the table as follows:

Case No. 1 had a senior high school average of 2.69, junior high school average 3.05, I. Q. 86 and Uniform Test score of 26. It ranked 78 in senior high school, 77.5 in junior high school, 97.5 in I. Q. and 103 in the Uniform Test of Mental Performance, which place the case in the third quartile in grade average and in fourth quartile in intelligence test.

A Summary of the Table Shows:

Sixteen, or 15.4 per cent. of the cases, ranked in the same quartile in all four criteria.

Thirty-three, or 31 per cent. of the cases, ranked in the same quartile in three of the criteria while one was

either one quartile below or one above.

Twenty, or 19 per cent. of the cases, ranked in the same quartile in two with the other two in another quartile either one quartile below or one quartile above.

Ten, or 9.4 per cent. of all the cases, ranked in the same quartile in two criteria with one criterion in first quartile above and one in first quartile below.

This gave a total of 79 or approximately 75 per cent. of cases ranking in the same or joining quartiles.

This is another way to study the relationship of the four variables. It is not as exact as the correlation given in the previous table but it supplements the correlations by showing in simple terminology the extent of variation.

CONCLUSION AND DISCUSSION

1. With the high correlation found in this study, considerable weight can be assigned to its predictive value even though only 106 cases were used. The study should be continued to check the results.

2. The extremely high correlation between junior and senior high school grades can be accounted for only by the fact, that, the standards of grading and conditions of study are uniform in both schools. The junior high school mean is only .31 of a grade scale step higher than senior

high school.

3. The correlations for girls are much higher than for boys for each test. This can probably be explained from the generally conceded fact that the effort put forth in study by girls is more uniform than by boys.

4. The Peterson Uniform Test of Mental Performance shows a correlation of .12 higher for boys than does the Terman I. Q. This would indicate that the Peterson test probably is a better test for boys than is the Terman test. On the other hand the Terman I. Q. shows a correlation of .04 higher for girls than does the Peterson test. This would indicate a very slight difference in favor of the Terman test. When boys and girls were studied together as a group the Peterson test shows .0045 superiority which is not significant. However, because of the limited number of cases, these differences are not statistically valid.

5. The average of junior high school grades is the best single criterion from which to forecast senior high school grades when records are available and senior high school work is continued in the same school system. The difficulty is that junior high school grades are not always available. This difficulty was encountered repeatedly in this study. Approximately 25 per cent of the cases fulfilling all other requirements were not used because junior high school grades were not available. In rural and community

high schools, where one-half of the pupils come from outlying districts, junior high school records would not be available nor would the conditions of work be such that they could be used. It would then seem, that for general use, the results obtained from the two intelligence tests, which can be quickly given and scored would be the best criterion to use, in predicting success in high school. However, the partial and multiple correlations contained herein show that something is contributed by previous school records which is not fully measured by the tests. In view of the professed interest of education in guidance and proper placement of pupils, it is difficult to account for the failure of schools to keep cumulative individual records for constant use by teachers and administrators.

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