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THE USE OF CLERICAL, INTELLIGENCE, AND PERSONALITY
TESTS FOR GUIDANCE PURPOSES IN SHORTHAND
I, TYPEWRITING I, AND OFFICE MACHINES

A Thesis Submitted to the Graduate Division in Partial
Fulfillment of the Requirements for the
Degree of Master of Science

By
Charles Clinton Green

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KANSAS STATE TEACHERS COLLEGE

Pittsburg, Kansas

August, 1950

WINTER

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Abstract

The purpose of this study is to find a test or combination of tests in the areas of intelligence, clerical ability, and personality that could, for prognostic purposes, be relied upon as a tool to aid in a counseling situation for students desiring to enroll in shorthand I, typewriting I, or office machines.

Three well-known, standardized tests were used in the investigation. Juniors and Seniors of the Labette County Community High School at Altamont, Kansas enrolled in the subjects mentioned made up the experimental group. The tests were administered and the correlations of the results determined. In addition to the correlations of the results, figures showing the distribution of the results were drawn and analyzed for a clearer understanding.

It was found that an average intelligence and above was indicative of good achievement in shorthand I, and typewriting I, and that an above average intelligence was necessary for good work in office machines. A personality rating of "unsatisfactory or "very unsatisfactory" was indicative of poor work in all three subjects investigated. Certain percentile rankings on parts 1 and 2 of the Minnesota Clerical test were found to differentiate between good and poor achievement.

Because the group was not selected and the number was relatively small, very little emphasis may be placed

on the correlation coefficients shown in each instance. Except for the correlation coefficient of $.65\frac{1}{2}$.09 found between intelligence and office machines marks, which in general may be considered significant, they are probably too low for predictive purposes. They are, however, an aid in understanding the study and as such are included. The individual analyses of the figures seem to be of more value in predicting success. In these may be found the areas that are differentiated by each test. The conclusions of the study are based upon the information gleaned from the figures.

The use of this tool, combined with marks in English, marks in other subjects, and interests, may be of some value in counseling and guiding students interested in enrolling in shorthand I, typewriting I, and office machines.

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CHAPTER I

INTRODUCTION

The Problem

The problem in this study is to compare the results of three tests in the areas of intelligence, clerical ability, and personality with achievement, as measured by teachers' marks, in shorthand I, typewriting I, and office machines to determine their value as a guidance tool for predicting success in these subjects.

Purpose of the Study

The Purpose of this study is to find a test or combination of tests in the areas of intelligence, clerical ability, and personality that could, for prognostic purposes, be relied upon as an aid in a counseling situation for students desiring to take shorthand I, typewriting I, or office machines.

Students Included

Students enrolled in classes of shorthand I, typewriting I, and office machines at the Labette County Community High School, Altamont, Kansas made up the group. The group consists entirely of juniors and seniors; numbering sixty-one in all.

Values of the Study

To be able to predict with reasonable success and accuracy the future success of the student in the commercial courses being investigated is a value that is self-evident. The economic saving to the community in salaries, equipment, and facilities that are needed to train the misplaced students would be sizeable. To save one or two years' effort on the part of the individual, not to mention the other complications involved in following a course of study for which the individual is not fitted, is immeasurable from the standpoint of the student. Another value, possibly of lesser significance, are the benefits derived by the teachers and administration in carrying out such a study. The fresh point of view that will be gained from these efforts should not be denied mention in the topic of values. Dame-Brinkman and Weaver state:

Course failures in high school, complete failures in college, inferiority complexes, petty thievery, alcoholic overindulgence, communicable diseases, initial business failures--all of these and countless more are results of nonexistent or inadequate guidance.¹

Turille says:

"Know Thyself." These two words expounded by that early guidance philosopher and teacher, Socrates, is still appropriate today--centuries later.....The need for guidance in the business department is apparent. The sizeable number of

¹J. F. Dame, A. R. Brinkman, and W. E. Weaver, Prognosis, Guidance, and Placement in Business Education, (Cincinnati, Ohio: Southwestern Publishing Company, 1944), p. 9.

misfits in out stenographic, clerical, and bookkeeping curricula is ample evidence.²

Limits of the Study

The correlations and analyses of the figures are limited to the subjects of shorthand I, typewriting I, and office machines. Only the areas of intelligence, clerical ability, and personality are included in the investigation. The writer is aware of the importance of the areas of interest, motivation, and related subjects as aids in prognosis, but was unable to include these because of time limits and lack of clerical assistance. No attempt is made to select the group as the writer desires to work with the group in its normal setting. The measurement of achievement and success is limited to the combined data obtainable by objective and subjective means and expressed as a mark of A, B, C, D, or F and their plus and minus variations.

The writer wishes to point out again that only the subjects of typewriting I, shorthand I, and office machines are considered in this study and that the findings and conclusions in this study apply only to these subjects. The relationship of scores made on tests in the areas of intelligence, clerical ability, and personality to marks earned in the subjects mentioned, and the significance of

²S. J. Turille, "Vocational Guidance in Business Education," Journal of Business Education, XIX (April, 1944), 17-18.

this relationship, forms the nucleus of this study.

Hardaway states: "Teachers' marks, though not reliable measures, may appear to be reasonable, because they are the chief basis upon which school success depends."³

In support of the areas investigated, Parker says:

Taken together, careful measurements of intelligence, clerical aptitude, motor skills, and personality traits throw much light on the prospects of an individual's success in office occupations.⁴

Definition of Terms

Correlation. The term correlation as used in this study refers to the relationship between two series of data relating to the same individual. To illustrate: if the scores made on clerical ability test by students enrolled in shorthand I were compared to marks received in the course, a correlation coefficient could be obtained by employing the mathematical formula $Rho = \frac{1}{n} \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}}$. The relationship of clerical ability scores to shorthand I could be positive, chance, or negative. These results are expressed mathematically as 1.00 (positive), 00. (chance), and - 1.00 (negative). Applied to the problem at hand, if a large enough percentage of the students in shorthand I

³Mathilde Hardaway, "Prognostic or Aptitude Tests for Skill Subjects," The Business Education World, XXV (March, 1945), 371.

⁴W. E. Parker, "Techniques for Counseling Business Students," The Journal of Business Education, XIV (June, 1939), 17-18.

made a score of 90, which is high on the clerical ability test and the same students also earned a mark of "A" in the subject, one could infer that students making a score of 90 on the clerical ability test would earn a mark of "A" in the subject. In this study a correlation coefficient of .25 was found between part 2, Minnesota Clerical Test and marks in shorthand I. Although this is a positive correlation it is probably not high enough to be relied upon for predictive purposes, since .60 is considered the minimum.

Probable Error. There is always a possibility that our calculations are not exactly correct. To qualify our correlation then we may use the formula $PE_p = \frac{.7063}{N} (1 - p^2)$ to determine the extent to which our answer might vary.

Applying this to the example stated above in which a correlation coefficient of .25 was found between clerical ability and shorthand I marks, we find a probable error of .11 which means that the correlation coefficient .25 could have been between .36 (.25 + .11) and .14 (.25 - .11). The true correlation coefficient then lies somewhere between .14 and .36.

Percentile Ranking. This term is used to indicate a person's position in the group. The group is considered to be 100. Therefore, if an individual has a percentile ranking of 75 it means that he is 75th from the bottom. That is, he has a relative position better than 74 out of a 100. Percentiles are useful indicators of a person's position in his group, since nearly everyone with a sixth-

grade education can understand them. Scores for both parts of the Minnesota Clerical Test are expressed in percentile rankings.

Quartile. The dividing lines between quarters of percentiles are called quartiles. They are referred to in this study as the upper (76-100), lower (1-25), second (26-50), and third (51-75).

Intelligence Quotient. The intelligence quotient (I. Q.) is a method of expressing the relationship of a person's mental age to his chronological age. The mental age is determined by the individual's score on a general intelligence test. The mental age is then divided by the chronological age and multiplied by 100. For example, if a student had a mental age of 18 and was only 16 years old, his intelligence quotient would be 112. An average intelligence in this study is considered to be between 90 and 110.

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CHAPTER II

RESEARCH INSTRUMENTS AND PROCEDURES

Three well-known, standardized tests were used in the investigation. They are the Minnesota Clerical Test by Dorothy M. Andrew, Donald G. Paterson, and Howard P. Longstaff; the Henson-Nelson Tests of Mental Ability--Form A, by V. A. C. Henson and M. J. Nelson; and The Adjustment Inventory, student form, by High M. Bell.

The Minnesota Clerical Test consists of two parts, a Number Checking and a Name Checking test. The number checking and name checking parts of the test are also referred to as part 1 and part 2 respectively. In each of the tests there are two hundred items, one hundred of which are identical pairs and one hundred of which are dissimilar pairs. The numbers range from three through twelve digits, and the names from seven through sixteen letters. The test is so arranged that the first one hundred items may be compared with the second one hundred items of each test. The test has been correlated to some of the areas with which this investigation deals. These studies will be referred to later. In commenting on the test, Parker states:

For the more routine clerical tasks, clerical aptitude can be measured by a number of well standardized tests. This specialized trait of clerical aptitude has an important bearing on the success or failure of individuals in office work. There is probably no occupational field for which valid measurements may be obtained so well as that of the commercial occupations. There is available a considerable

literature on the field of tests which can be administered and interpreted with minimum of training by any teacher, counselor or office manager. The Minnesota Clerical Aptitude Test, one of the best of these, consists of two parts. Part one requires eight minutes to administer and is composed of pairs of numbers which the person tested is to check or proof-read for similarity. The other section of the test consists of pairs of names which are also checked for similarity, and requires seven minutes to administer. This test can be quickly and easily scored, and norms are available for many of the clerical occupations. In a comparatively few minutes, a fairly accurate score of the native clerical aptitude of the student or applicant may be obtained by this device.¹

The Henmon-Nelson Tests of Mental Ability--Form A, High School Examination--Grades 7 to 12, was the instrument used for measuring intelligence. It is also a well-known and widely accepted tool for this purpose. The following comment by August Dvorak is helpful:

The chief advantages of these tests (Henmon-Nelson) lie in their ease of administration and scoring and that the relatively small number (90) of items require only 30 minutes of pupils' time. They may be an adequate measuring instrument for measuring intelligence if a low-cost (3¢ per pupil), 30 minute, quick-scoring test is desired.²

The Adjustment Inventory, Student Form, by Hugh M. Bell, is used for the personality measurement. Only the total score is considered. The following excerpt from the table of norms shown in the manual gives the placement and description of the scores.

¹Ibid.

²Oscar K. Buros, Nineteen Forty Mental Measurements Yearbook, (Highland Park, N. J.: The Mental Measurements Yearbook, 1941), p. 1398.

<u>High School Score Range</u>			Description
	Men	Women	
	0-12	0-15	Excellent
Total	13-24	16-31	Good
Score	25-44	32-57	Average
	45-60	58-74	Unsatisfactory
	Above 60	Above 74	Very Unsatisfactory

Dame-Brinkman and Weaver state:

As a means of motivation and as a check on progress the following tests for the measurement of personality are helpful:

The Adjustment Inventory by Hugh M. Bell³

The described tests were given at the beginning of the 1949-50 school term. All rules, regulations, and directions as given in the manuals for each test were strictly followed. The writer feels that the results obtained by these tests are comparable to those obtained by others who have used them. These results are compared later in the study.

Teachers' marks were chosen as the basis for measuring achievement because the writer felt that these marks reflected more than just the ability to write shorthand, type mechanically, or operate an office machine in a routine manner. The total make-up of the student is reflected in the teachers' mark more than any other single measurement. Since success in a course does, at the present time, depend upon the measurement by the teacher in the form of a mark, this criterion was used in the study as the basis of success.

³Op. cit., p. 140

In regard to this decision, Tonne, Popham, and Freeman state:

Grading. The typewriting grade should be based on a composite of the student's total typewriting ability; not alone his speed at the end of the grading period.⁴

All marks used are the final marks in the subjects.

The teachers did not know the results of the tests before making out the grades.

⁴H. A. Tonne, Popham, E. L., and Freeman, M. H., Methods of Teaching Business Subjects, (New York, N. Y.: The Gregg Publishing Company, 1949), 154.

CHAPTER III

PRESENTATION AND INTERPRETATION OF DATA

In view of the fact that this is a thesis dealing with the results obtained by a study which is almost entirely statistical in nature, the only results will be found to be those in this chapter. The main results will be found in the commentary preceding the figures to follow. The rank correlation coefficients derived from the tables in the appendix are shown with the figures.

Figure 1. is the comparison of intelligence quotients to marks in typewriting I.

Figure 2. is the comparison of Minnesota Clerical Test, part 1, percentile rankings to marks in typewriting I.

Figure 3. is the comparison of Minnesota Clerical Test, part 2, percentile rankings to marks in typewriting I.

Figure 4. is the comparison of Adjustment Inventory scores total to marks in typewriting I.

Figure 5. is the comparison of intelligence quotients to marks in shorthand I.

Figure 6. is the comparison of Minnesota Clerical Test, part 1, percentile rankings to marks in shorthand I.

Figure 7. is the comparison of Minnesota Clerical Test, part 2, percentile rankings to marks in shorthand I.

Figure 8. is the comparison of Adjustment Inventory scores total to marks in shorthand I.

Figure 9. is the comparison of intelligence quotients to marks in office machines.

Figure 10. is the comparison of Minnesota Clerical Test, part 1, percentile rankings to marks in office machines.

Figure 11. is the comparison of Minnesota Clerical Test, part 2, percentile rankings to marks in office machines.

Figure 12. shows the comparison of Adjustment Inventory scores (total) to marks in office machines.

A complete discussion of these correlations and an analysis of the figures follows. Rank order lists supporting each figure may be found in the appendix.

Figure 1. shows a rank correlation coefficient $.25 \pm .12$ between intelligence quotients and marks in typewriting I. This is very close to the correlation coefficient of .26 found by Swenson in a similar study of 474 students.¹ Although this coefficient of correlation is not strong enough to be reliable in itself, analysis of the Figure furnishes some interesting information. Fifty-six per cent of the students with an average and above intelligence quotient (90 and above) received a mark of "B" and better. Eighty-three per cent of those students with an intelligence quotient lower than 90 received a mark of "C" or lower. This would indicate that an average intelligence, at least, is necessary to excel in typewriting I.

¹Clarence Alonzo Swenson, "A Study of the Relation of Intelligence to Achievement in Certain Commercial Subjects in 'Commercial High School,' Atlanta, Georgia." (Unpublished master's thesis, Kansas State Teachers College, Pittsburg, Kansas, 1932), p. 11.

A A	A- B B	B- C C	C- D D	D- F	N									
116-120	1	1			2									
111-115	2	1	1	1	5									
106-110		1	1	3	6									
101-105			1	1	3									
96-100		1	1		5									
91- 95		1	1	1	4									
86- 90			2		2									
81- 85			2		2									
76- 80		1	1		2									
Correlation Coefficient = .25 \pm .12														
N	0	3	4	3	4	1	0	9	1	0	6	0	0	31

Figure 1. The comparison of intelligence quotients to marks in typewriting I

In Figure 2 a rank correlation coefficient of $.20 \pm .12$ between part one of the Minnesota Clerical Test and marks in typewriting I was found. All students in the upper quartile of the Minnesota Clerical Test earned a mark of "B" or better. This fact would seem significant. Those students ranking in the second and third quartiles had an almost equal distribution of good and poor marks. The test does not seem to differentiate in this area. Sixty per cent of those students ranking in the lower quartile made a mark of "C" or lower. Seventeen per cent of the students ranked below the fifteenth percentile and of these, none made a mark above "C". It would seem that percentile rankings in the upper quartile and rankings below the fifteenth percentile would differentiate between good

and poor work respectively. This fact was brought out also by Stroker when she stated:

The Minnesota Clerical test and two academic ability tests were given to a group of employed women clerical workers and these showed that the clerical test differentiated slow, average, and rapid typists better than did the academic ability tests.²

A/A	A-B	B/B	B-C	C/C	C-D	D/D	D-F	N						
96-100								0						
91-95			1					1						
86-90	1							1						
81-85								0						
76-80								0						
71-75	1	1		1				3						
66-70						3		3						
61-65				1				1						
56-60			1	3				4						
51-55			1					1						
46-50		1	1					2						
41-45		1						1						
36-40								0						
31-35		1				1		2						
26-30						1		1						
21-25		1		1				2						
16-20	1		1		1			3						
11-15					2			2						
6-10					2		1	3						
0-5								0						
Correlation Coefficient = .20 2 .12														
N	0	3	3	3	4	1	0	9	1	0	6	0	0	30

Figure 2. The comparison of Minnesota Clerical Test, part 1, percentile rankings to marks in typewriting I

² Mary Guinn Stroker, "Aids for the Prognosis of Success in Typewriting," The Kansas Business Teacher, III (May, 1950), 4.

A rank correlation coefficient of $.38 \pm .11$ between part 2, Minnesota Clerical Test and marks in typewriting is shown in Figure 3. The significant item, perhaps, in the Figure is the fact that 27 per cent of the students ranked below the 15th percentile and of that group 88 per cent made a mark of "C" or lower. In this respect the test seems definitely to indicate poor achievement in this area.

	A/ A	A- B/ B	B- C/ C	C- D/ D	D- F	N								
96-100						0								
91- 95	1					1								
86- 90				1		1								
81- 85						0								
76- 80		1		1		2								
71- 75			1			1								
66- 70			1		1	2								
61- 65			1			1								
56- 60		1				1								
51- 55						0								
46- 50					1	1								
41- 45	1					1								
36- 40			1		2	3								
31- 35		1	1			2								
26- 30				1		1								
21- 25	1	1			1	3								
16- 20			1			2								
11- 15				1		1								
6- 10				3	1	4								
0- 5				1	1	3								
Correlation Coefficient = .38 ± .11														
N	0	3	3	3	4	1	0	9	1	0	6	0	0	30

Figure 3. The comparison of Minnesota Clerical Test, part 2, percentile rankings to marks in typewriting I

Figure 4 shows a rank correlation coefficient of $-.17 \pm .125$ between The Adjustment Inventory and marks in typewriting I.

Fifty-seven per cent of the students with a rating of "average" or better on the Adjustment Inventory received a mark of "B" or better, while 83 per cent of those with a rating of "good" or "excellent" earned a mark of "C" or below. In contrast to this, 86 per cent of those with an "unsatisfactory" or "very unsatisfactory" rating made a mark of "C" or below with none making an "A". It might be significant that those with a rating at either extreme did not excel while those with a rating of "average" did the best work.

A A	A B	B B	B C	C C	C D	D D	D F	N						
96-100								0						
91- 95			1					1						
86- 90				1				1						
81- 85				1		1		2						
76- 80						1		1						
71- 75				1				1						
66- 70								0						
61- 65				1				1						
56- 60	3		1	1				5						
51- 55		1	1		1			3						
46- 50		1	2	1				4						
41- 45								0						
36- 40								0						
31- 35			1		1	1	2	5						
26- 30					1			1						
21- 25		1						1						
16- 20							2	2						
11- 15					1			1						
6- 10					1			1						
0- 5								0						
Correlation Coefficient = $-.17 \pm .125$														
N	0	3	3	3	4	1	0	9	1	0	6	0	0	30

Figure 4. The comparison of Adjustment Inventory scores (total) to marks in typewriting I

Figure 5. reveals that of the 63 per cent who made a mark of "B" or above, 86 per cent had an intelligence quotient greater than 90. This evidence is definitely in favor of the average and above intelligence student doing good work in shorthand I. A rank correlation coefficient of $.35 \pm .11$ was found between intelligence quotients and marks in shorthand I. Swenson found a somewhat higher coefficient of .42 in his study, but the results are comparable.³

A A	A- B B	B- C C	C- D D	D- F	N									
116-120	1	1		1	3									
111-115	2	1	1		4									
106-110		1	4	1	7									
101-105	1	2		1	6									
96-100		1	1	2	5									
91- 95	1	1	1	1	4									
86- 90		2		1	3									
81- 85				1	1									
76- 80		1			1									
Correlation Coefficient = .35 \pm .11														
N	0	5	0	2	9	5	0	1	3	0	4	0	5	34

Figure 5. The comparison of intelligence quotients to marks in shorthand I

Figure 6 shows a rank correlation coefficient of $.25 \pm .11$ between part 1, of the Minnesota Clerical Test and marks in shorthand I. Eighty per cent of the students making a mark of "A" ranked above the 60 percentile. This

³Op. cit., p. 8.

is, perhaps, a good indication that those ranking above the 60 percentile will excel in shorthand I. The Manual for the Minnesota Clerical Test states

Additional findings indicate that of the students who attained a speed in dictation of 80 or more words a minute, all but one had a centile rating above 85 on the Clerical Test.

An analysis of the individuals in this study shows that of the students who attained a speed of 80 or more words a minute, all but one has a percentile rating above 63.

	A- A	A- B	B- B	B- C	C- C	C- D	D- D	D- F	N					
96-100									0					
91- 95						1			1					
86- 90	1								1					
81- 85									0					
76- 80									0					
71- 75	1		1	1			1		4					
66- 70			1				1		2					
61- 65	2	1							3					
56- 60			2			3			5					
51- 55									0					
46- 50				1	1				2					
41- 45									0					
36- 40			1						1					
31- 35			1					1	2					
26- 30			1					1	2					
21- 25		1		2				2	5					
16- 20									0					
11- 15			1						1					
6- 10	1		1				2	1	5					
0- 5									0					
Correlation Coefficient = .25 ± .11														
N	0	5	0	2	9	4	0	1	4	0	4	0	5	34

Figure 6. The comparison of Minnesota Clerical Test, part I, percentile rankings to marks in shorthand I

In the comparison of the Minnesota Clerical Test, part 2, with marks in shorthand I, as shown in Figure 7, a rank correlation coefficient of $.25 \pm .11$ was found. An interesting sidelight in this area is that both parts of the Clerical Test produced a rank correlation coefficient of $.25 \pm .11$. A significant point in Figure 7 is that all students in the upper quartile of the Clerical Test make a mark of "B" or better. Other percentile rankings did not differentiate between good and poor students.

	A/ A	A- B/ B	B- C/ C	C- D/ D	D- F	N								
96-100						0								
91- 95	1					1								
86- 90		1				1								
81- 85						0								
76- 80		1				1								
71- 75	1			1		2								
66- 70				1		1								
61- 65			1		1	3								
56- 60						0								
51- 55	1					1								
46- 50					1	1								
41- 45	1					1								
36- 40			1		1	3								
31- 35			1		1	4								
26- 30				1		1								
21- 25			1		1	3								
16- 20			2		1	4								
11- 15			1		1	2								
6- 10			2		2	4								
0- 5	1				1	2								
Correlation Coefficient = .25 \pm .11														
N	0	5	0	1	10	4	0	1	4	0	4	0	6	35

Figure 7. The comparison of Minnesota Clerical Test, part 2, percentile rankings to marks in shorthand I

Figure 8 shows a rank correlation coefficient of $.21 \pm .12$ between the Adjustment Inventory and marks in shorthand I. Ratings at either extreme did not seem to differentiate between good and poor shorthand students. That is, there was an equal distribution of grades both for those that rated "unsatisfactory" and "very unsatisfactory" and those that rated "good" or "excellent." In the "average" rating group, however, 65 per cent made a mark of "B" or above. Eighty per cent of the "A's" were found in the "average" rating group. It would seem that the student with the "average" rating has the best chances for good achievement in shorthand I.

	A- A	A- B	B- B	B- C	C- C	C- D	D- D	D- F	N					
96-100	1								1					
91- 95									0					
86- 90			1						1					
81- 85								2	2					
76- 80			1		1				2					
71- 75				1			1		2					
66- 70					1				1					
61- 65			1						1					
56- 60	3	1			1				5					
51- 55			1	1	1			2	5					
46- 50			2		1				3					
41- 45			1						1					
36- 40			2						2					
31- 35	1			1			1		3					
26- 30				1		1			2					
21- 25									0					
16- 20							1		1					
11- 15									0					
6- 10		1							1					
1- 5									0					
Correlation Coefficient = .21 \pm .12														
N	0	5	0	2	9	4	0	1	4	0	4	0	4	33

Figure 8. The comparison of Adjustment Inventory scores, (total), to marks in shorthand I

In the comparison of intelligence quotients and marks in office machines, as shown in Figure 9, a rank correlation coefficient of $.65 \pm .09$ was found. This coefficient is high enough to be relied upon and could, perhaps be used as a predictive measure of success in office machines. No student with an intelligence quotient lower than 106 earned an "A" in the subject. It would appear from the results shown that an intelligence quotient of at least 100 is necessary for doing good work in office machines.

A A	A- B B	B- C C	C- D D	D- E E	N									
126-130					0									
121-125	1		1		2									
116-120					0									
111-115	1	1	2	2	1									
106-110	1			1	2									
101-105			2	1	1									
96-100			1	1	2									
91-95					0									
86-90					0									
81-85			1		2									
76-80					0									
71-75				1	1									
Correlation Coefficient = .65 ± .09														
N	0	3	1	0	3	7	1	4	0	0	1	0	0	20

Figure 9. The comparison of intelligence quotients to marks in office machines

A comparison of percentile rankings on part 1 of the Minnesota Clerical Test and marks in office machines, as shown in Figure 10., reveals a rank correlation coefficient

of .21 \pm .15. The marks in this table seem to be quite evenly distributed. The significant fact here, perhaps, is that no one with a percentile ranking lower than 30 earned an "A" in the subject, at which point the test seems to differentiate between good and average or poor work.

A A	A- B B	B- C C	C- D D	D-F	H									
96-100					0									
91-95					0									
86-90					0									
81-85	2				2									
76-80					0									
71-75			2		2									
66-70		1			1									
61-65					0									
56-60			1	1	2									
51-55					0									
46-50			1		1									
41-45					0									
36-40			2		2									
31-35	2			1	3									
26-30			1		1									
21-25					0									
16-20		1	3		4									
11-15					0									
6-10				1	1									
0-5					0									
Correlation Coefficient = .21 \pm .15														
H	0	4	0	0	2	7	1	4	0	0	1	0	0	19

Figure 10. The comparison of Minnesota Clerical Test, part 1, percentile rankings to marks in office machines

Figure 11, which is a comparison of percentile rankings on part 2 of the Minnesota Clerical Test and marks in office machines, shows a rank correlation coefficient of .37 \pm .135.

Although no one in the first and second quartiles did poor work, these rankings do not seem to differentiate clearly. In the third quartile, however, 88 per cent of the students made a mark of "B" or better and of those in the lower quartile, none received an "A". A percentile ranking lower than 30 seems to indicate average or poor work.

A A	A- B B	B- C C	C- D D	D- F F	N									
96-100					0									
91- 95					0									
86- 90					0									
81- 85					0									
76- 80					0									
71- 75	1				1									
66- 70					0									
61- 65					0									
56- 60			1	1	2									
51- 55			1	1	2									
46- 50	1				1									
41- 45					0									
36- 40	1	1			2									
31- 35	1		2	1	4									
26- 30			1		1									
21- 25			2		2									
16- 20				2	2									
11- 15					0									
6- 10		1			1									
0- 5				1	1									
Correlation Coefficient = .37 ± .135														
N	0	3	1	0	2	7	1	4	0	0	1	0	0	19

Figure 11. The comparison of Minnesota Clerical Test, part 2, percentile rankings to marks in office machines

Figure 12 shows a rank correlation coefficient of $.42 \pm .13$ between scores on the Adjustment Inventory and marks in office machines. Of those students with a rating

of "average", 77 per cent received a mark of "B" or better; while of those rating "unsatisfactory" or "very unsatisfactory" none made an "A" and 75 per cent earned a mark of "C". All students with a "good" or "excellent" rating earned a mark of "B" or better. This analysis of Table XII would indicate, perhaps, that those students with a personality rating of "average" or better have a definite advantage in the study of office machines.

A A	A- B B	B- C C	C- D D	D- F	N									
96-100					0									
91- 95		1			1									
86- 90					0									
81- 85					0									
76- 80			1		1									
71- 75					0									
66- 70				2	2									
61- 65					0									
56- 60	1		2		3									
51- 55	1			1	2									
46- 50		1	2	1	5									
41- 45			2		2									
36- 40		1			1									
31- 35					0									
26- 30	1				1									
21- 25					0									
16- 20			1		1									
11- 15					0									
6- 10					0									
0- 5					0									
Correlation Coefficient = .42 \pm .13														
N	0	3	1	0	2	7	1	4	0	0	1	0	0	19

Figure 12. The comparison of Adjustment Inventory scores (total) to marks in office machines

CHAPTER IV

SUMMARY AND CONCLUSIONS

The data in Chapter III can best be summarized by grouping the information under the three subject headings typewriting I, shorthand I, and office machines.

Typewriting I. A rank correlation coefficient of $.25 \pm .12$ was found between intelligence quotients and marks in typewriting I. Fifty-six per cent of the students with average and above intelligence quotients (90 and up) made a mark of "B" or better. Eighty-three per cent of those students with an intelligence quotient lower than 90 earned a mark of "C" or lower. A rank correlation coefficient of $.20 \pm .12$ was found between part one of the Minnesota Clerical Test and marks in typewriting I. All students in the upper quartile of the Minnesota Clerical Test earned a mark of "B" or better. Sixty per cent of those students ranking in the lower quartile earned a mark of "C" or lower; while 17 per cent of the students ranked below the 15 percentile and of those, none made a mark above "C". A rank correlation coefficient of $.38 \pm .11$ between part 2 of the Minnesota Clerical Test and marks in typewriting I was found. Twenty-seven per cent of the students ranked below the 15th percentile and of that group 88 per cent earned a mark of "C" or lower. A rank correlation coefficient of $-.17 \pm .125$ was found between The Adjustment Inventory and marks in typewriting I. Fifty-seven per cent of the students with a rating of "average"

or better on the Adjustment Inventory earned a mark of "B" or better, while 83 per cent of those with a rating of "good" or "excellent" earned a mark of "C" or below. Eighty-six per cent of those with an "unsatisfactory" or "very unsatisfactory" rating earned a mark of "C" or below with none making an "A".

Shorthand I. A rank correlation coefficient of $.35 \pm .11$ was found between intelligence quotients and marks in shorthand I. Of the 63 per cent who made a mark of "B" or above, 66 per cent had an intelligence quotient greater than 90. A rank correlation coefficient of $.25 \pm .11$ between part 1 of the Minnesota Clerical Test and marks in shorthand I. Eighty per cent of the students making a mark of "A" ranked above the 60th percentile. Of those students that attained a speed of 80 or more words a minute, all but one had a percentile rating above 63. A rank correlation coefficient of $.25 \pm .11$ was found between part 2 of the Minnesota Clerical Test and marks in shorthand I. All students in the upper quartile of the Clerical Test received a mark of "B" or better. Other percentile rankings did not differentiate between good and poor students. A rank correlation coefficient of $.21 \pm .12$ was found between the adjustment inventory and marks in shorthand I. Ratings at either extreme did not seem to differentiate between good and poor shorthand students. In the "average" rating group 65 per cent earned a mark of "B" or above. Eighty per cent of the "A's" were found in this group.

Office Machines. A rank correlation coefficient of $.65 \pm .09$ was found between intelligence quotients and marks in office machines. No student with an intelligence quotient lower than 106 received an "A" in the course. A rank correlation coefficient of $.21 \pm .15$ was found between percentile rankings on part 1 of the Minnesota Clerical Test and marks in office machines. No one with a percentile ranking lower than 30 earned an "A" in the subject. A rank correlation coefficient of $.37 \pm .135$ was found between percentile rankings on part 2 of the Minnesota Clerical Test and marks in office machines. In the third quartile 88 per cent of the students made a mark of "B" or better and of those in the lower quartile, none made an "A". A rank correlation coefficient of $.42 \pm .13$ was found between scores on the Adjustment Inventory and marks in office machines. Of those students with a rating of "average", 77 per cent received a mark of "B" or better; while of those rating "unsatisfactory" or "very unsatisfactory" none earned an "A" and 75 per cent earned a mark of "C". All students with a "good" or "excellent" rating made a mark of "B" or better.

Conclusions

In drawing the conclusions it would be more easily understood, perhaps, if the particular areas of each test that seem significant were grouped under the headings of typewriting I, shorthand I, and office machines, to which

each pertain.

In regard to the method of expressing the conclusions in this study, Bills says:

Probably the best way of expressing the efficiency of any test is in terms of the percentage of times it succeeds or fails to select the desired group. If you get a 75 per cent correct choice above a given critical score and only 25 per cent correct choice below that critical score, I believe that the test is predicting success as well as it can be expected to, when one considers the innumerable other factors that are involved in any clerical job.....All tests are valuable only as they help in the present or future adjustment of individuals to their environment.¹

The writer feels that the conclusions to follow make up a guidance tool of definite value in the counseling of students desiring to enter shorthand I, typewriting I, or office machines. It should be understood, however, that these conclusions are only an aid and should be used and considered as such. Combined with information that is available from the school about a student in the way of English and foreign language marks, average marks in other academic subjects, and interests; this aid should make it possible to predict more closely the student's performance. Daze states:

Realistic business education requires that careful selection processes...be initiated and maintained.....There are two elements in selection as applied to business education; namely, interest and ability. There are three major selection techniques which may be carried

¹Marion Bills, "Ability and Aptitude Tests for Clerical Workers," Journal of Business Education, XIX (December, 1943), 13-14.

on in business education. The first has to do with prognostic testing. The second technique used in selection processes involves an analysis of the relationship between school marks in various school subjects and the subject to be studied. The third possible technique utilizes the exploratory or tryout course as a means of introducing the pupil, through experience of direct nature, to the various specialized fields of business education.

None of the methods of selection just described possess sufficient reliability and validity to warrant the use of any one of the three to the exclusion of the others. Probably the guidance minded school will be utilizing elements of at least two possible procedures.²

Because the group was not selected and the number was relatively small, very little emphasis may be placed on the correlation coefficients shown in each instance. Except for the $.65 \pm .09$ found between intelligence and office machines marks, which in general may be considered significant, they are probably too low for predictive purposes. They are, however, an aid in understanding the study and as such are included. Much more important, and of more value, are the individual analyses of each figure. In these may be found the areas that are differentiated by each test. The conclusions of the study are based upon the information gleaned from the figures. Should the reader be interested in seeing the rank-order tables comparing the tests with one another rather than with achievement, he is referred to the Appendix.

²J. P. Demo, "There is an Adequate Selection, Guidance, Placement, and Follow-up Plan." The National Business Education Quarterly, XVIII No. 2, (Winter, 1949), 59.

Typewriting I. Good achievement would, from the results shown, seem to be forthcoming for a student who has an intelligence quotient greater than 90; a percentile ranking in the upper quartile of part 1, of the Clerical Test; a percentile ranking above the 15th percentile on part 2 of the clerical test; and an "average" rating on the Adjustment Inventory.

Poor achievement would seem to be the outcome for a student who has an intelligence quotient below 90; a percentile ranking below 15 on part 1 of the Clerical Test; a percentile ranking below 15 on part 2 of the Clerical Test; and a rating of "unsatisfactory" or "very unsatisfactory" on the Adjustment Inventory.

Shorthand I. A student with an intelligence quotient greater than 90; a percentile ranking on part 1 of the Clerical Test above 60; a ranking in the upper quartile of part 2 of the Clerical Test; and a rating of "average" on the Adjustment Inventory could, from the results shown, be expected to excel in shorthand I.

Poor achievement could, it seems, be expected from a student having an intelligence quotient less than 90; a percentile ranking lower than 40 on part 1 of the Clerical Test; and a rating of "unsatisfactory" or "very unsatisfactory" on the Adjustment Inventory.

Office Machines. Good achievement should, from the results shown, be forthcoming from a student with an intelligence quotient greater than 106; a percentile ranking

on part 1 of the Clerical Test higher than 30; a percentile ranking above the first quartile on part 2 of the Clerical Test; and a rating on the Adjustment Inventory of "average" or better.

Poor achievement is indicated, perhaps, by an intelligence quotient lower than 100; a percentile ranking lower than 15 on part 1 of the Minnesota Clerical Test; a percentile ranking lower than 15 on part 2 of the Clerical Test; and a rating of "unsatisfactory" or "very unsatisfactory" on the Adjustment Inventory.

The reader is reminded again that this study, and the extent to which it might be used, is valuable as a guidance tool in the subjects of typewriting I, shorthand I, and office machines only. Intelligently used, it might be a useful aid in counseling and guiding students interested in these subjects.

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APPENDIX

THE CLAPP-YOUNG SELF-MARKING TESTS

Patented March 19, 1929. Also Licensed under U.S. Patent 1,586,628

Edited by Frank L. Clapp, Professor of Education
University of Wisconsin

THE HENMON-NELSON TESTS OF MENTAL ABILITY—Form A

High School Examination . Grades 7-12

By V. A. C. Henmon, Ph.D., Chairman of the Department of Psychology,
University of Wisconsin, and M. J. Nelson, Ph.D., Dean of the
Faculty, Iowa State Teachers College

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DIRECTIONS TO THE STUDENT: The three Practice Exercises in the next column at the right are given so that you may see how to do the test. Read each one carefully and mark the answer that you think is right.

Practice Exercise 1. Boys like to play: 1 ball, 2 state, 3 dust, 4 never, 5 blue

1 2 3 4 5

You are to mark in the square which has the same number as does the word that tells what it is boys like to play. This word is "ball." You make a mark like this X in the square that contains the 1, because the number of the word "ball" is 1.

Practice Exercise 2. I am down town. A word for the blank is: 1 able, 2 see, 3 country, 4 going, 5 color.....

1 2 3 4 5

Mark in the square that you think should be marked. The right word is "going," so you should have marked in the square numbered 4.

Practice Exercise 3. ○ is to ○ as □ is to: 1 △, 2 □, 3 □, 4 ▽, 5 □.....

1 2 3 4 5

The answer, of course, is number 3, since a circle is to a smaller circle as a square is to a smaller square.

If you find that you have made a mistake and marked in the wrong square, do not erase, but simply draw a circle around it and then mark in the right square.

1. Which word does not belong with the others? 1 Ida, 2 Paul, 3 Lucy, 4 Janet, 5 Edith..... 1 2 3 4 5
2. Better is to good as worse is to: 1 very good, 2 medium, 3 bad, 4 much worse, 5 best..... 1 2 3 4 5
3. 1, 6, 11, 16, ..., 31. What two numbers should be on the dotted lines? (1) 21 and 26, (2) 17 and 25, (3) 26 and 29, (4) 22 and 27, (5) 20 and 25..... 1 2 3 4 5
4. It was raining too hard to out. A word for the blank is: 1 comment, 2 gather, 3 venture, 4 summon, 5 render..... 1 2 3 4 5
5. 1, 4, 7, 10, ..., 19. What two numbers should be on the dotted lines? (1) 11 and 14, (2) 15 and 17, (3) 12 and 16, (4) 13 and 16, (5) 12 and 17..... 1 2 3 4 5
6. If the letters d g r e n a a r were arranged properly, they would spell: 1 renegade, 2 degenerate, 3 nagging, 4 arranged, 5 managed..... 1 2 3 4 5
7. 25, 25, 21, 21, 17, 17, ..., What two numbers should come next? (1) 15 and 15, (2) 17 and 11, (3) 13 and 13, (4) 12 and 12, (5) 17 and 13..... 1 2 3 4 5
8. Stagnant water is: 1 motionless, 2 fresh, 3 rapid, 4 clear, 5 foaming..... 1 2 3 4 5
9. My sister's daughter is my father's 1 niece, 2 cousin, 3 granddaughter, 4 sister-in-law, 5 aunt.... 1 2 3 4 5
10. 512, 256, 128, 64, 32, ..., What two numbers should come next? (1) 8 and 4, (2) 31 and 30, (3) 33 and 34, (4) 16 and 8, (5) 24 and 16..... 1 2 3 4 5
11. If the letters n i p i c l a r p were arranged properly, they would spell: 1 appliance, 2 purchase, 3 impatient, 4 capacious, 5 principal..... 1 2 3 4 5
12. of term for is president a four the elected years If these words were arranged to make a good sentence, what would be the next to the last word? 1 years, 2 elected, 3 president, 4 four, 5 term..... 1 2 3 4 5
13. The daughter of my uncle has a son. My father is her son's 1 cousin, 2 grandfather, 3 great-uncle, 4 great-grandfather, 5 brother..... 1 2 3 4 5
14. 37, 33, 29, ..., 17. What two numbers should be on the dotted lines? (1) 28 and 19, (2) 25 and 19, (3) 26 and 20, (4) 25 and 21, (5) 25 and 20..... 1 2 3 4 5
15. A drizzling rain fell without A word for the blank is: 1 beginning, 2 opposite, 3 intermission, 4 length, 5 moisture..... 1 2 3 4 5
16. ○ is to ○ as ' is to: 1 ○, 2 ' , 3 □, 4 —, 5 —..... 1 2 3 4 5
17. My mother's daughter's daughter is my daughter's 1 aunt, 2 nephew, 3 cousin, 4 mother, 5 niece 1 2 3 4 5
18. Water seeks its own A word for the blank is: 1 money, 2 weight, 3 cold, 4 level, 5 length..... 1 2 3 4 5
19. ○ is to ⊕ as □ is to: 1 ψ, 2 ⊞, 3 ⊥, 4 ⊞, 5 ⊥..... 1 2 3 4 5

20. to the tourists every climate the brings many summer mountains If the above words were arranged to make a good sentence, what would be the word before "brings"? 1 every, 2 mountains, 3 tourists, 4 the, 5 climate.... 1 2 3 4 5
21. If the letters l e c r e a were arranged properly, they would spell: 1 reclaim, 2 earnest, 3 actual, 4 cereal, 5 leather..... 1 2 3 4 5
22. "Many cooks spoil the broth" means about the same as: 1 A good fire makes a good cook. 2 Every cook praises his own broth. 3 Two captains sink the ship. 4 Civilized man cannot live without cooks. 5 All lay loads on the willing horse..... 1 2 3 4 5
23.) is to (as □ is to: 1 ∪, 2 □, 3 □, 4 □, 5 (..... 1 2 3 4 5
24. 5, 9, 13, 17, 21, 25, ..., What two numbers should come next? (1) 29 and 30, (2) 29 and 31, (3) 29 and 33, (4) 25 and 27, (5) 27 and 29..... 1 2 3 4 5
25. ⊥ is to ⊥ as ⊥ is to: 1 ⊥, 2 ⊥, 3 ⊥, 4 ⊥, 5 ⊥..... 1 2 3 4 5
26. Truth is to falsehood as pride is to: 1 fear, 2 crime, 3 honor, 4 humility, 5 truth..... 1 2 3 4 5
27. 240, 120, 60, 30, What number should come next? (1) 20, (2) 15, (3) 10, (4) 25, (5) 40..... 1 2 3 4 5
28. □ is to □ as ○ is to: 1 □, 2 ○, 3 ○, 4 □, 5 ○..... 1 2 3 4 5
29. Which word does not belong with the others? 1 solarium, 2 academy, 3 seminary, 4 college, 5 university.... 1 2 3 4 5
30. 98, 87, 76, ..., 43. What two numbers should be placed on the dotted lines? (1) 66 and 44, (2) 65 and 53, (3) 65 and 54, (4) 50 and 45, (5) 60 and 50..... 1 2 3 4 5
31. Ice is to water as water is to: 1 steam, 2 cold, 3 river, 4 thirst, 5 land..... 1 2 3 4 5
32. △ is to ▽ as △ is to: 1 ▽, 2 ▽, 3 ○, 4 △, 5 ▽..... 1 2 3 4 5
33. Which word does not belong with the others? 1 novice, 2 accomplice, 3 partner, 4 associate, 5 helper..... 1 2 3 4 5
34. 29, 33, 34, 38, 39, 43, 44, ..., What two numbers should come next? (1) 45 and 46, (2) 45 and 49, (3) 47 and 48, (4) 46 and 50, (5) 48 and 49..... 1 2 3 4 5
35. Which word does not belong with the others? 1 vertical, 2 parallel, 3 horizontal, 4 vernacular, 5 perpendicular. 1 2 3 4 5
36. Energetic means about the same as: 1 sorry, 2 sleepy, 3 forceful, 4 happy, 5 brave..... 1 2 3 4 5
37. ∪ is to ∩ as ○ is to: 1 □, 2 ○, 3 ∩, 4 ∪, 5 □..... 1 2 3 4 5
38. Expand is the opposite of: 1 intake, 2 propound, 3 contract, 4 impound, 5 dead..... 1 2 3 4 5

To find the score, count the squares that are marked out, omitting those that are circled.

20 ☐

21 ☐

22 ☐

23 ☐

24 ☐

25 ☐

26 ☐

27 ☐

28 ☐

29 ☐

30 ☐

31 ☐

32 ☐

33 ☐

34 ☐

35 ☐

36 ☐

37 ☐

38 ☐

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

6 ☐

7 ☐

8 ☐

9 ☐

10 ☐

11 ☐

12 ☐

13 ☐

14 ☐

15 ☐

16 ☐

17 ☐

18 ☐

19 ☐

66 ☐

67 ☐

68 ☐

69 ☐

70 ☐

71 ☐

72 ☐

73 ☐

74 ☐

75 ☐

76 ☐

77 ☐

78 ☐

79 ☐

80 ☐

81 ☐

82 ☐

83 ☐

84 ☐

85 ☐

86 ☐

87 ☐

88 ☐

89 ☐

90 ☐

39 ☐

40 ☐

41 ☐

42 ☐

43 ☐

44 ☐

45 ☐

46 ☐

47 ☐

48 ☐

49 ☐

50 ☐

51 ☐

52 ☐

53 ☐

54 ☐

55 ☐

56 ☐

57 ☐

58 ☐

59 ☐

60 ☐

61 ☐

62 ☐

63 ☐

64 ☐

65 ☐

39. Tall is to short as day is to: 1 long, 2 night, 3 week, 4 day, 5 morning..... [1] [2] [3] [4] [5]
40. "Better aim at a star than shoot down a well; you'll hit higher" means about the same as: 1 Hasty climbers have sudden falls. 2 Aim above the mark to hit the mark. 3 "Almost" kills no man. 4 Rash haste makes waste. 5 Might is not right..... [1] [2] [3] [4] [5]
41. Accumulate is the opposite of: 1 will, 2 accommodate, 3 dissipate, 4 trust, 5 sew..... [1] [2] [3] [4] [5]
42. A genius always has: 1 ability, 2 friends, 3 inventions, 4 money, 5 fame..... [1] [2] [3] [4] [5]
43. | is to | as / is to: 1 —, 2 /, 3 |, 4 □, 5 —..... [1] [2] [3] [4] [5]
44. Better implements are an of advance in civilization. A word for the blank is: 1 era, 2 impediment, 3 epicure, 4 indication, 5 escape..... [1] [2] [3] [4] [5]
45. An inaccessible place cannot be: 1 reached, 2 seen, 3 described, 4 pierced, 5 carried..... [1] [2] [3] [4] [5]
46. A book of the Old Testament is: 1 Matthew, 2 Luke, 3 Psalms, 4 Revelation, 5 Corinthians..... [1] [2] [3] [4] [5]
47. A silver shekel is worth about 60¢. How many shekels could one buy for \$204.00? (1) 34, (2) 340, (3) 1284, (4) 3400, (5) 128..... [1] [2] [3] [4] [5]
48. involved in recent the nations war many were If these words were arranged to make a good sentence, what would be the first letter of the word before "nations"? 1 i, 2 n, 3 r, 4 m, 5 t..... [1] [2] [3] [4] [5]
49. 810, 270, 90, 30, What number should come next? (1) 10, (2) 15, (3) 20, (4) 0, (5) 5..... [1] [2] [3] [4] [5]
50. A cymbal is used in: 1 gardening, 2 surgery, 3 painting, 4 sculpture, 5 music..... [1] [2] [3] [4] [5]
51. A penitent person is always: 1 sorry, 2 carefree, 3 ill, 4 showy, 5 idiotic..... [1] [2] [3] [4] [5]
52. Imitate is to copy as invent is to: 1 study, 2 originate, 3 invention, 4 machine, 5 work..... [1] [2] [3] [4] [5]
53. fruit children good cereals are for and If these words were arranged to make a good sentence, what would be the second word? 1 fruit, 2 children, 3 good, 4 cereals, 5 and..... [1] [2] [3] [4] [5]
54. A wheel always has: 1 an axle, 2 circumference, 3 paint, 4 a tire, 5 spokes..... [1] [2] [3] [4] [5]
55. The uncle of my father's grandson is my: 1 nephew, 2 cousin, 3 grandfather, 4 brother, 5 son..... [1] [2] [3] [4] [5]
56. 6, 4, 7, 5, 8, 6, 9, What number should come next? (1) 7, (2) 10, (3) 8, (4) 6, (5) 11..... [1] [2] [3] [4] [5]
57. Which word does not belong with the others? 1 apparatus, 2 foundation, 3 equipment, 4 device, 5 appliance..... [1] [2] [3] [4] [5]
58. Inconsequential means about the same as: 1 sorry, 2 incorrect, 3 useful, 4 unimportant, 5 necessary..... [1] [2] [3] [4] [5]
59. □ is to □ as □ is to: 1 ∪, 2 ∩, 3 □, 4 □, 5 □..... [1] [2] [3] [4] [5]
60. On an addition test a boy got 12 problems right, giving him an accuracy of 75%. How many problems did he miss? (1) 8, (2) 9, (3) 6, (4) 4, (5) 3..... [1] [2] [3] [4] [5]
61. The United States entered the World War in: (1) 1914, (2) 1915, (3) 1916, (4) 1917, (5) 1918..... [1] [2] [3] [4] [5]
62. Which word does not belong with the others? 1 rostrum, 2 structure, 3 cathedral, 4 edifice, 5 building..... [1] [2] [3] [4] [5]
63. Circle is to ellipse as square is to: 1 oval, 2 cube, 3 curve, 4 circle, 5 diamond..... [1] [2] [3] [4] [5]
64. "Les Miserables" was written by: 1 Hugo, 2 Faguet, 3 Molière, 4 Martin, 5 Daudet..... [1] [2] [3] [4] [5]
65. Napoleon said a French soldier was equal to 3 Austrians or to 5 Russians. A dozen Austrian soldiers were equal to how many Russians? (1) 20, (2) 6, (3) 15, (4) 60, (5) 36..... [1] [2] [3] [4] [5]

66. A statute is a: 1 proverb, 2 law, 3 monument, 4 judgment, 5 trial..... [1] [2] [3]
67. his scientific admired taste he knowledge for his artistic and for was If these words were arranged to make a good sentence, what would be the word after "artistic"? 1 taste, 2 admired, 3 scientific, 4 knowledge, 5 was.. [1] [2] [3]
68. A certain kind of wood is $\frac{1}{2}$ as heavy as water. Iron is about 7 times as heavy as water. Iron is how many times as heavy as the wood? (1) 21 times, (2) 7 times, (3) $3\frac{1}{2}$ times, (4) 14 times, (5) $7\frac{1}{2}$ times..... [1] [2] [3]
69. Prosperity is to happiness as adversity is to: 1 success, 2 sorrow, 3 fun, 4 rage, 5 joy..... [1] [2] [3]
70. A jade is: 1 worthless, 2 insulting, 3 clownish, 4 princely, 5 cowardly..... [1] [2] [3]
71. 3, 6, 8, 16, 18, 36, What two numbers should come next? (1) 38 and 40, (2) 38 and 43, (3) 39 and 41, (4) 39 and 78, (5) 38 and 76..... [1] [2] [3]
72. If a franc were worth $2\frac{1}{2}$ c, how many francs would one receive for \$100.00? (1) 2500, (2) 400, (3) 40,000, (4) 250, (5) 4000..... [1] [2] [3]
73. Anger is to violence as love is to: 1 caressing, 2 hate, 3 tempter, 4 hope, 5 happiness..... [1] [2] [3]
74. 27, 9, 3, 1, $\frac{1}{3}$, What two numbers should come next? (1) $\frac{2}{3}$ and $\frac{1}{3}$, (2) $\frac{2}{3}$ and $\frac{1}{9}$, (3) $\frac{1}{9}$ and $\frac{1}{27}$, (4) $\frac{1}{9}$ and $\frac{1}{18}$, (5) $\frac{1}{6}$ and $\frac{1}{9}$ [1] [2] [3]
75. Tyrol is a mountainous province in the (1) Alps, (2) Pyrenees, (3) Rockies, (4) Andes, (5) Himalayas. [1] [2] [3]
76. How many feet are there in one rod and one and one-half yards? (1) 12, (2) 18, (3) 19, (4) 21, (5) 36..... [1] [2] [3]
77. Sorrow is to misfortune as joy is to: 1 grief, 2 happiness, 3 hatred, 4 success, 5 pride..... [1] [2] [3]
78. "It is indeed an ill wind that blows no one good" means about the same as: 1 Birds of a feather flock together. 2 Correspondence is half a presence. 3 Patience is the key of glory. 4 The calamities of one nation turn to the benefit of another. 5 The tongue is the neck's enemy.. [1] [2] [3]
79. The beginning of the abolition movement created a in the South. A word for the blank is: 1 casual, 2 orator, 3 furor, 4 colony, 5 prevalence..... [1] [2] [3]
80. Asbestos is a product of: 1 trees, 2 petroleum, 3 mines, 4 wool, 5 cotton..... [1] [2] [3]
81. \triangle is to \triangleright as ∇ is to: 1 \triangleleft , 2 \supset , 3 \mathcal{M} , 4 \mathcal{P} , 5 \triangleleft [1] [2] [3]
82. Subsequent means: 1 small, 2 attached, 3 following, 4 irregular, 5 important..... [1] [2] [3]
83. Occult affairs are: 1 religious, 2 open, 3 optical, 4 secret, 5 eight-sided..... [1] [2] [3]
84. A mediator is one who: 1 intervenes, 2 judges, 3 legislates, 4 computes, 5 punishes..... [1] [2] [3]
85. "Wise men learn by other men's mistakes; fools by their own" means about the same as: 1 Misfortune is a cheap teacher. 2 We learn to do by doing. 3 Experience is a dear teacher. 4 A good seaman is known in bad weather. 5 Mistakes occur in the best regulated families..... [1] [2] [3]
86. An obvious fact is: 1 assumed, 2 hateful, 3 clear, 4 hidden, 5 doubtful..... [1] [2] [3]
87. A recreant individual is: 1 young, 2 reborn, 3 smug, 4 happy, 5 cowardly..... [1] [2] [3]
88. Fear is to anticipation as regret is to: 1 memory, 2 hope, 3 sorrow, 4 hate, 5 forget..... [1] [2] [3] [4] [5]
89. Superfluous is the opposite of: 1 certain, 2 essential, 3 ambiguous, 4 petite, 5 succinct..... [1] [2] [3] [4] [5]
90. A minion is: 1 upright, 2 contrary, 3 servile, 4 poor, 5 impudent..... [1] [2] [3] [4] [5]

MINNESOTA CLERICAL TEST

(formerly the Minnesota Vocational Test for Clerical Workers)

by Dorothy M. Andrew, Donald G. Paterson, and Howard P. Longstaff

Name _____ Date _____

TEST 1—Number Comparison

Number Right _____

Number Wrong _____

Score = R—W _____

Percentile Rating _____

TEST 2—Name Comparison

Number Right _____

Number Wrong _____

Score = R—W _____

Percentile Rating _____

Instructions

On the inside pages there are two tests. One of the tests consists of pairs of names and the other of pairs of numbers. If the two names or the two numbers of a pair are *exactly the same* make a check mark (✓) on the line between them; if they are *different*, make no mark on that line. When the examiner says "Stop!" draw a line under the last pair at which you have looked.

Samples done correctly of pairs of Numbers

79542 _____ 79524

5794367 ✓ 5794367

Samples done correctly of pairs of Names

John C. Linder _____ John C. Lender

Investors Syndicate ✓ Investors Syndicate

Now try the samples below.

66273894 _____ 66273984

527384578 _____ 527384578

New York World _____ New York World

Cargill Grain Co. _____ Cargil Grain Co.

This is a test for Speed and Accuracy. Work as fast as you can without making mistakes.

Do not turn this page until you are told to begin.

Test 1

✓ Check if the two numbers are the same.

- | | | | | | |
|-----|--------------|--------------|------|--------------|--------------|
| 1. | 307 | 309 | 51. | 5829 | 5820 |
| 2. | 4605 | 4603 | 52. | 192836472829 | 192836472829 |
| 3. | 976 | 996 | 53. | 362 | 362 |
| 4. | 101267 | 101267 | 54. | 2039271827 | 2039276837 |
| 5. | 3065432 | 30965432 | 55. | 73829 | 73829 |
| 6. | 103345700 | 103345700 | 56. | 82739102837 | 82739102837 |
| 7. | 46754 | 466754 | 57. | 48891028 | 48891028 |
| 8. | 3367490 | 3367490 | 58. | 7291728 | 7291928 |
| 9. | 2779 | 2778 | 59. | 172839102839 | 172839102839 |
| 10. | 57394 | 57394 | 60. | 628192 | 628102 |
| 11. | 63801829374 | 63801839474 | 61. | 473829432 | 473829432 |
| 12. | 283577657 | 283577657 | 62. | 478 | 478 |
| 13. | 75689 | 75689 | 63. | 372816253902 | 372816252902 |
| 14. | 2547892026 | 2547893026 | 64. | 64829 | 64830 |
| 15. | 336354 | 336254 | 65. | 4739210249 | 4739210249 |
| 16. | 998745732 | 998745733 | 66. | 748362 | 748363 |
| 17. | 623 | 623 | 67. | 728354792 | 728354772 |
| 18. | 263849102983 | 263849102983 | 68. | 3927 | 3927 |
| 19. | 5870 | 5870 | 69. | 927384625 | 927384625 |
| 20. | 379012 | 379012 | 70. | 4628156 | 4628158 |
| 21. | 8734629 | 8734629 | 71. | 6382 | 6392 |
| 22. | 2549806746 | 2549806746 | 72. | 12937453829 | 12937453829 |
| 23. | 57802564 | 57892564 | 73. | 523 | 533 |
| 24. | 689246 | 688246 | 74. | 7263920 | 7263920 |
| 25. | 1578024683 | 1578024683 | 75. | 74293 | 74293 |
| 26. | 582039485618 | 582039485618 | 76. | 82734291 | 82734271 |
| 27. | 63829172630 | 63829172639 | 77. | 2739102637 | 2739102637 |
| 28. | 592 | 592 | 78. | 62810263849 | 62810263846 |
| 29. | 829374820 | 829374820 | 79. | 638291 | 638291 |
| 30. | 62937456 | 63937456 | 80. | 62831027 | 62831027 |
| 31. | 8293 | 8293 | 81. | 527 | 529 |
| 32. | 6382910293 | 6382910292 | 82. | 172438291026 | 172438291026 |
| 33. | 781928374012 | 781928374912 | 83. | 7253829142 | 725382942 |
| 34. | 68293 | 68393 | 84. | 836287 | 836289 |
| 35. | 18203649271 | 18293649271 | 85. | 62435162839 | 62435162839 |
| 36. | 4820384 | 4820384 | 86. | 6254 | 6256 |
| 37. | 283019283745 | 283019283745 | 87. | 6241526 | 6241526 |
| 38. | 73927102 | 73927102 | 88. | 1426389012 | 1426389102 |
| 39. | 91029354829 | 91029354829 | 89. | 825 | 825 |
| 40. | 38291728 | 38291728 | 90. | 67253917287 | 67253917287 |
| 41. | 6283910293 | 6283910203 | 91. | 6271 | 6271 |
| 42. | 392018273648 | 392018273848 | 92. | 263819253627 | 263819253629 |
| 43. | 820 | 829 | 93. | 82637 | 82937 |
| 44. | 572937273 | 572937373 | 94. | 728392736 | 728392736 |
| 45. | 7392 | 7392 | 95. | 62739 | 62739 |
| 46. | 8172036 | 8172036 | 96. | 728352689 | 728352688 |
| 47. | 68391028364 | 68391028394 | 97. | 463728 | 463728 |
| 48. | 48293 | 48292 | 98. | 73829176 | 73827196 |
| 49. | 739201 | 739201 | 99. | 4825367 | 4825369 |
| 50. | 62839201 | 62839211 | 100. | 56382018 | 56382018 |

✓ Check if the two numbers are the same.

101. 789 — 789
 102. 819263728192 — 819263728172
 103. 682537289 — 682537298
 104. 7245 — 7245
 105. 82936542891 — 82936542891
 106. 4738267 — 4738277
 107. 63728 — 63729
 108. 6283628901 — 6283628991
 109. 918264 — 918264
 110. 263728192037 — 263728192073
 111. 52839102738 — 5283910238
 112. 6283 — 6282
 113. 7283529152 — 7283529152
 114. 208 — 298
 115. 82637201927 — 8263720127
 116. 15273826 — 15273826
 117. 72537 — 73537
 118. 726391027384 — 726391027384
 119. 627389 — 627399
 120. 725382910 — 725382910
 121. 46273 — 46273
 122. 629 — 620
 123. 7382517283 — 7382517283
 124. 637281 — 639281
 125. 2738261 — 2728261
 126. 627152637490 — 627152637490
 127. 73526189 — 73526189
 128. 5372 — 5392
 129. 63728142 — 63728124
 130. 4783946 — 4783046
 131. 82637281028 — 82637281028
 132. 628 — 628
 133. 7293728172 — 7293728177
 134. 7362 — 7362
 135. 927382615 — 927382615
 136. 85345 — 85345
 137. 895643278 — 895643277
 138. 726352 — 726353
 139. 7263524 — 7263524
 140. 632685 — 632685
 141. 273648293048 — 273648293048
 142. 634 — 634
 143. 7362536478 — 7362536478
 144. 7362 — 7363
 145. 7362819273 — 7362819273
 146. 63728 — 63738
 147. 63728192637 — 63728192639
 148. 728 — 738
 149. 62738291527 — 62738291529
 150. 63728192 — 63728192

151. 73526 — 73526
 152. 7283627189 — 7283627189
 153. 627 — 637
 154. 728352617283 — 728352617282
 155. 6281 — 6381
 156. 936271826 — 936371826
 157. 82637192037 — 82637192037
 158. 527182 — 527182
 159. 6273 — 6273
 160. 726354256 — 72635456
 161. 725361552637 — 725361555637
 162. 7526378 — 7526377
 163. 685 — 685
 164. 82637481028 — 82637481028
 165. 3427 — 3429
 166. 827364933251 — 827364933351
 167. 63728 — 63728
 168. 6273846273 — 6273846293
 169. 62836 — 6283
 170. 2638496 — 2638496
 171. 738291627874 — 738291627874
 172. 62836454 — 62836455
 173. 42738267 — 42738269
 174. 573829 — 573829
 175. 628364728 — 628364928
 176. 725 — 735
 177. 627385 — 627383
 178. 63354 — 63354
 179. 54283902 — 54283602
 180. 7283562781 — 7283562781
 181. 62738 — 63738
 182. 727355542321 — 72735542321
 183. 263849332 — 263849332
 184. 162837 — 163837
 185. 47382912 — 47382922
 186. 628367299 — 628367399
 187. 111 — 111
 188. 11829304829 — 11828304829
 189. 4448 — 4448
 190. 333693678 — 333693678
 191. 3212 — 3212
 192. 27389223678 — 27389223678
 193. 473829 — 473829
 194. 7382937 — 7383937
 195. 3628901223 — 3628901233
 196. 5572867 — 5572867
 197. 87263543 — 87263543
 198. 3678902 — 3678892
 199. 15672839 — 15672839
 200. 9927382 — 9927382

Test 2

✓ Check if the two names are the same.

- | | |
|---|--|
| 1. Hulme Co.—Hulne Co. | 51. Armo Culvert Co.—Armo Culvert & Co. |
| 2. L. T. Piver—L. T. Piver | 52. Larous & Bro.—Larus & Bro. |
| 3. Foley & Co.—Foley & Co. | 53. Winstar W. B.—Winstar W. B. |
| 4. Floyd Gibbons—Floyd Gibbens | 54. Bender L. C.—Binder L. C. |
| 5. Dole Publishing Co.—Dole Publishing Co. | 55. J. C. Andresen Inc.—J. C. Andresen Inc. |
| 6. Chase Bag Co.—Chase Bag Co. | 56. Vacuum Oil Company—Vacuum Oil Company |
| 7. Aladdin Co.—Aladdin & Co. | 57. Endicott Co.—Endicott Co. |
| 8. Arthur Bier & Co.—Arthur Bier Co. | 58. Minneapolis Mfg. Co.—Minneapolis Mfg. Co. |
| 9. Mydall Cain—Mydell Cain | 59. Beverly A. B.—Beverley A. B. |
| 10. M. C. D. Borden & Sons—M. C. D. Borden & Sons | 60. Jensen & Co.—Jenson & Co. |
| 11. Midland Nat'l. Bank—Midland Nat'l. Bank | 61. Meumann L. R.—Meumann L. R. |
| 12. Hixon Lt'd.—Hixon Lt'd. | 62. Stevenson & Co.—Stevenson & Co. |
| 13. R. Weiner—R. Wiener | 63. Haldoran H. P.—Haldoran H. P. |
| 14. Pacqueres—Pacqueris | 64. Evers Bros.—Evers Bros. |
| 15. Ponemah Mills—Ponemah Mills | 65. Nevens Sales Co.—Nevens Sale Co. |
| 16. Keeley Institute—Keeley's Institute | 66. Outdoor Sign Co.—Outdoor Sign Co. |
| 17. Jim Pepper—Jim Pepper | 67. Young & Co.—Young & Co. |
| 18. Pictorial Review—Pictorial Review | 68. Goodyear Tire Co.—Goodyear Tire Co. |
| 19. Colette Cartier—Colette Cartier | 69. Redford Lb'r. Co.—Redford Lb'r. Co. |
| 20. Mayno Salon—Mayno's Salon | 70. Canadian National—Canadian Nat'l. |
| 21. Glazo Co.—Glazo Inc. | 71. Standard Oil Co.—Standard Oil Co. |
| 22. Bonne Lee—Bonne & Lee | 72. Valiant Mfg. Co.—Valant Mfg. Co. |
| 23. Vapo Cresolene Co.—Vapo Cresolen Co. | 73. C. Harris—C. Harris |
| 24. Wiebusch & Helger—Weibusch & Helger | 74. J. Williams Company—G. Williams Company |
| 25. A. M. Davis—A. M. Davis | 75. Kaufmann A. C.—Kaufman A. C. |
| 26. Foote Lb'r. Co.—Foot Lb'r. Co. | 76. Frisby N. C.—Frisby N. C. |
| 27. Lander's—Lander's | 77. Donald T. C.—Donald T. C. |
| 28. Delle Ross—Dell Ross | 78. Waldo Inc.—Waldo Co. |
| 29. Savage Rug Co.—Savage Rug Co. | 79. Andres Mfg. Co.—Andres Mfg. Co. |
| 30. Landon & Warner—Landen & Warner | 80. Oriza Ann Legrand—Oriza Anne Legrand |
| 31. Dennison's—Dennison's | 81. A. Stein & Company—A. Stien & Company |
| 32. Piggily Wiggily Co.—Piggily Wiggily Co. | 82. Robert Courtney—Robert S. Courtney |
| 33. Hurley Machine Co.—Hurly Machine Co. | 83. Leonard Music Co.—Leonard Music Co. |
| 34. J. Bauer & Black—J. Baeur & Black | 84. George Morgan—George Morgen |
| 35. Edwin Cigar Co.—Edwin Cigar Co. | 85. Paulson's Cafe—Paulson's Cafe |
| 36. Vik Oil Co.—Vik Oil Co. | 86. Robert T. Quamme—Robert T. Quame |
| 37. John Skinner & Sons—John Skinner & Son | 87. Traverse Studio—Traverse Studio |
| 38. Eagle Pencil Co.—Eagle Pencil Co. | 88. Upton Grain Co.—Upten Grain Co. |
| 39. Hudson Bros.—Hudson Bros. | 89. E. E. Atkinson—E. E. Atkinson |
| 40. D. M. Ferry & Co.—D. M. Ferry Co. | 90. Zeisler Furrier—Ziesler Furrier |
| 41. Johnsen A. J.—Johnson A. J. | 91. E. G. Kenyon—E. G. Kenyon |
| 42. Todd & Son—Todd & Sons | 92. Backus, Roy—Backus, Ray |
| 43. Merrill Palmer—Merrill Palmer | 93. Carpenter Steel Co.—Carpenter Steel Co. |
| 44. T. Cook & Son—T. Cook & Son | 94. W. E. Davenport—W. E. Davanport |
| 45. Funk & Wagnall—Funk & Wagnull | 95. John Kingsley—John G. Kingsley |
| 46. F. H. Vizetelly—F. H. Vizitelly | 96. Lane Inc.—Lane Inc. |
| 47. Higgen & Co.—Higgin & Co. | 97. T. G. Lentingworth—T. G. Lentinworth |
| 48. Bert Cooksley—Bert Cooksley | 98. Elizabeth Bennett—Elizabeth Bennett |
| 49. W. C. Wadsworth Co.—W. C. Wadworth Co. | 99. Charibel—Claribel |
| 50. Alvah Bushnell—Alvah Bushnell | 100. R. C. A. Victor Company—R. C. A. Victor Company |

✓ Check if the two names are the same.

- | | | | |
|------|---|------|--|
| 101. | Crane Ltd.—Crane Co. | 151. | H. J. Heinz—H. J. Hienz |
| 102. | Isaac F. Marcossan—Isaac F. Marcason | 152. | National City Co.—National City Co. |
| 103. | Stromberg Carlson—Stromberg Carlsen | 153. | Dorothy Gray—Dorothy Gray |
| 104. | W. A. Evans—W. A. Evans | 154. | Reinhard Brothers—Reinhart Brothers |
| 105. | Mason Tile Co.—Matson Tile Co. | 155. | Oscar Bye—Oscar Bye |
| 106. | Clark Frame Co.—Clark Frame Co. | 156. | Ben Coal Co.—Ben Coal Co. |
| 107. | William G. Kellogg—William P. Kellogg | 157. | C. Lundstrom Mfg. Co.—C. Lundstrom Mfg. Co. |
| 108. | Berwind Briquets—Berwind Briquets | 158. | J. C. McKesson Drug Co.—J. C. MacKesson Drug Co. |
| 109. | F. W. Bronson—F. W. Bronson | 159. | Waite Coal Co.—Wait Coal Co. |
| 110. | Nash Motors—Nash Motor | 160. | Berry Brothers—Berry Brothers |
| 111. | C. E. Locke—C. E. Lock | 161. | J. Coty Co.—J. Coty Co. |
| 112. | Mazer Cressman Co.—Mazer Cressmon Co. | 162. | F. R. Connell—F. R. Connell |
| 113. | Leslie Thrasher—Leslie Thrasher | 163. | Dr. Miles Company—Dr. Mills Company |
| 114. | Plough Inc.—Plough Lt'd. | 164. | Northam Warrer—Northam Warren |
| 115. | Walpole—Wallpole | 165. | Indian Refining Co.—Indian Refining Co. |
| 116. | John Hergesheim—John Hergesheimer | 166. | Jack Richard—Jack Richard |
| 117. | Hudson Bay & Co. Ltd.—Hudson Bay Co. Ltd. | 167. | Kirsch Mfg. Co.—Kircsh Mfg. Co. |
| 118. | Lassco Co.—Lassko Co. | 168. | Jack Wachter—Jack Wachter |
| 119. | Albert Mills—Albert Mill | 169. | C. M. Stend—C. M. Stent |
| 120. | Yale Stores—Yale Store | 170. | John Blassingham—John Blassingham |
| 121. | Bob Fairbanks—Bob Fairbanks | 171. | W. W. Brock—W. W. Brock |
| 122. | Denton Products—Denten Products | 172. | L. Waterman Company—L. Watermon Company |
| 123. | Wells Dickey Co.—Wells Dickey Inc. | 173. | F. H. Weaver—F. P. Weaver |
| 124. | S. N. Jonas—S. N. Jonus | 174. | Multistamp Co., Inc.—Multistamp Co., Inc. |
| 125. | Warren Co.—Warren Co. | 175. | Sani-flush—Sani-flush |
| 126. | Kelly Transfer—Kelly Transfer | 176. | Tung Sol Lamp Inc.—Tung Sul Lamp Inc. |
| 127. | S. Karpen & Brothers—S. Karpen & Brothers | 177. | F. J. Suderman—F. J. Suderman |
| 128. | A. J. Drexel—A. J. Drexel | 178. | Theo. Audel & Co.—Theo. Audel Co. |
| 129. | C. H. Salmon—S. H. Salmon | 179. | Cox Realtors—Cox Realtors |
| 130. | H. Simons Lbr. Co.—H. Simons Lbr. Co. | 180. | Kellogg Company—Kellogg Company |
| 131. | Villaume Lbr. Co.—Villaum Lbr. Co. | 181. | Ann Lowe—Anna Lowe |
| 132. | Banett Company—Banett Company | 182. | A. Cederstrand & Son—A. Cedarstrand & Son |
| 133. | B. B. Quinn—B. B. Quinn | 183. | Marschke Co.—Marsckhe Co. |
| 134. | Beauville Co.—Beauxville Co. | 184. | Collum & Ackerman—Collum & Ackerman |
| 135. | Gordon Mfg. Co.—Gordon Mfg. Co. | 185. | Insulite Co.—Insulite Co. |
| 136. | Curtis Mill Co.—Curtis Mill Co. | 186. | General Steel Co.—General Steel Co. |
| 137. | S. Jacobs & Company—S. Jacobs & Company | 187. | Charles Von Buelow—Charles Von Beulow |
| 138. | W. Morton—W. Morten | 188. | A. D. Beaudette—A. D. Beaudette |
| 139. | F. D. Prescott—F. D. Prescott | 189. | Firestone Tire Co.—Firestone Tire Co. |
| 140. | Old Gold—Old Gold | 190. | Foxsworth & Son—Foxsworth & Son |
| 141. | Jones Inc.—Jones Bros. | 191. | A. S. Hinds Co.—A. S. Hinds Co. |
| 142. | Petropalm & Son Inc.—Petropalm & Son Inc. | 192. | Charles Beardslee—Charles Beardslee |
| 143. | Palmers Ltd.—Palmers Ltd. | 193. | Axton Tobacco Co.—Axeton Tobacco Co. |
| 144. | Higgin Mfg. Co.—Higgen Mfg. Co. | 194. | Inso Board Co.—Inso Board Co. |
| 145. | Lehigh Coal Sales—Lehigh Coal Sales | 195. | Stanley Russell—Stanley Russell |
| 146. | Buick Motor Co.—Buick Motors Co. | 196. | Babson Mfg. Co.—Babsen Mfg. Co. |
| 147. | George Carpenter—George Carpentier | 197. | Bodee Institute—Bodee Institute |
| 148. | H. H. Hemenway—H. H. Hememway | 198. | Greer College—Greer College |
| 149. | M. A. Gladding—M. A. Gladding | 199. | Lampland Lbr. Co.—Lamplund Lbr. Co. |
| 150. | F. J. Cheney & Co.—F. J. Cheney & Co. | 200. | Bird & Son Inc.—Bird & Sons Inc. |

THE ADJUSTMENT INVENTORY

STUDENT FORM

(For students of high school and college age)

By HUGH M. BELL

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NAME	AGE	SEX
NAME OF SCHOOL	SCHOOL CLASS	
DATE		

DIRECTIONS

Are you interested in knowing more about your own personality? If you will answer *honestly* and *thoughtfully* all of the questions on the pages that follow, it will be possible for you to obtain a better understanding of yourself.

There are *no right* or *wrong* answers. Indicate your answer to each question by drawing a circle around the "Yes," the "No," or the "?". Use the question mark only when you are certain that you cannot answer "Yes" or "No." There is no time limit, but work rapidly.

If you have *not* been living with your parents, answer certain of the questions with regard to the people with whom you have been living.

NO.	SCORE	DESCRIPTION	REMARKS
a			
b			
c			
d			

- 1d Yes No ? Do you day-dream frequently?
- 2b Yes No ? Do you take cold rather easily from other people?
- 3c Yes No ? Do you enjoy social gatherings just to be with people?
- 4d Yes No ? Does it frighten you when you have to see a doctor about some illness?
- 5c Yes No ? At a reception or tea do you seek to meet the important person present?
- 6b Yes No ? Are your eyes very sensitive to light?
- 7a Yes No ? Did you ever have a strong desire to run away from home?
- 8c Yes No ? Do you take responsibility for introducing people at a party?
- 9a Yes No ? Do you sometimes feel that your parents are disappointed in you?
- 10d Yes No ? Do you frequently have spells of the "blues"?
- 11b Yes No ? Are you subject to hay fever or asthma?
- 12c Yes No ? Do you often have much difficulty in thinking of an appropriate remark to make in group conversation?
- 13a Yes No ? Have you been embarrassed because of the type of work your father does in order to support the family?
- 14b Yes No ? Have you ever had scarlet fever or diphtheria?
- 15c Yes No ? Did you ever take the lead to enliven a dull party?
- 16a Yes No ? Does your mother tend to dominate your home?
- 17d Yes No ? Have you ever felt that someone was hypnotizing you and making you act against your will?
- 18a Yes No ? Has either of your parents frequently criticized you unjustly?
- 19c Yes No ? Do you feel embarrassed when you have to enter a public assembly after everyone else has been seated?
- 20d Yes No ? Do you often feel lonesome, even when you are with people?
- 21a Yes No ? Do you feel there has been a lack of real affection and love in your home?
- 22c Yes No ? In school is it difficult for you to give an oral report before the class?
- 23b Yes No ? Do you have many headaches?
- 24a Yes No ? Have your relationships with your father usually been pleasant?
- 25b Yes No ? Do you sometimes have difficulty getting to sleep even when there are no noises to disturb you?
- 26c Yes No ? When riding on a train or a bus do you sometimes engage fellow-travelers in conversation?
- 27b Yes No ? Do you frequently feel very tired toward the end of the day?
- 28d Yes No ? Does the thought of an earthquake or a fire frighten you?
- 29b Yes No ? Have you lost weight recently?
- 30a Yes No ? Has either of your parents insisted on your obeying him or her regardless of whether or not the request was reasonable?
- 31c Yes No ? Do you find it easy to ask others for help?
- 32a Yes No ? Has illness or death among your immediate family tended to make home life unhappy for you?
- 33b Yes No ? Have you ever been seriously injured in any kind of an accident?
- 34a Yes No ? Has lack of money tended to make home unhappy for you?
- 35d Yes No ? Are you easily moved to tears?
- 36c Yes No ? Are you troubled with shyness?
- 37a Yes No ? Has either of your parents frequently found fault with your conduct?
- 38b Yes No ? Have you ever had a surgical operation?
- 39c Yes No ? Would you feel very self-conscious if you had to volunteer an idea to start a discussion among a group of people?
- 40d Yes No ? Do you dread the sight of a snake?
- 41a Yes No ? Have your parents frequently objected to the kind of companions that you go around with?
- 42d Yes No ? Do things often go wrong for you from no fault of your own?
- 43b Yes No ? Do you have many colds?
- 44c Yes No ? Have you had experience in making plans for and directing the actions of other people?
- 45d Yes No ? Are you frightened by lightning?
- 46a Yes No ? Is either of your parents very easily irritated?
- 47b Yes No ? Are you subject to attacks of influenza?

- 48d Yes No ? Have you frequently been depressed because of low marks in school?
- 49c Yes No ? Do you have difficulty in starting conversation with a person to whom you have just been introduced?
- 50b Yes No ? Have you had considerable illness during the last ten years?
- 51a Yes No ? Have you frequently disagreed with either of your parents about the way in which the work about the home should be done?
- 52d Yes No ? Do you sometimes envy the happiness that others seem to enjoy?
- 53c Yes No ? Have you frequently known the answer to a question in class but failed when called upon because you were afraid to speak out before the class?
- 54b Yes No ? Do you frequently suffer discomfort from gas in the stomach or intestines?
- 55a Yes No ? Have there been frequent family quarrels among your near relatives?
- 56c Yes No ? Do you find it easy to make friendly contacts with members of the opposite sex?
- 57d Yes No ? Do you get discouraged easily?
- 58b Yes No ? Do you frequently have spells of dizziness?
- 59a Yes No ? Have you frequently quarreled with your brothers or sisters?
- 60d Yes No ? Are you often sorry for the things you do?
- 61c Yes No ? If you were a guest at an important dinner would you do without something rather than ask to have it passed to you?
- 62a Yes No ? Do you think your parents fail to recognize that you are a mature person and hence treat you as if you were still a child?
- 63b Yes No ? Are you subject to eye strain?
- 64d Yes No ? Have you ever been afraid that you might jump off when you were on a high place?
- 65c Yes No ? Have you had a number of experiences in appearing before public gatherings?
- 66b Yes No ? Do you often feel fatigued when you get up in the morning?
- 67a Yes No ? Do you feel that your parents have been unduly strict with you?
- 68d Yes No ? Do you get angry easily?
- 69b Yes No ? Has it been necessary for you to have frequent medical attention?
- 70c Yes No ? Do you find it very difficult to speak in public?
- 71d Yes No ? Do you often feel just miserable?
- 72a Yes No ? Has either of your parents certain personal habits which irritate you?
- 73d Yes No ? Are you troubled with feelings of inferiority?
- 74b Yes No ? Do you feel tired most of the time?
- 75d Yes No ? Do you consider yourself rather a nervous person?
- 76c Yes No ? Do you enjoy social dancing a great deal?
- 77d Yes No ? Do you often feel self-conscious because of your personal appearance?
- 78a Yes No ? Do you love your mother more than your father?
- 79b Yes No ? Are you subject to attacks of indigestion?
- 80c Yes No ? When you want something from a person with whom you are not very well acquainted, would you rather write a note or letter to the individual than go and ask him or her personally?
- 81d Yes No ? Do you blush easily?
- 82a Yes No ? Have you frequently had to keep quiet or leave the house in order to have peace at home?
- 83c Yes No ? Do you feel very self-conscious in the presence of people whom you greatly admire, but with whom you are not well acquainted?
- 84b Yes No ? Are you subject to tonsillitis or laryngitis?
- 85d Yes No ? Are you ever bothered by the feeling that things are not real?
- 86a Yes No ? Have the actions of either of your parents aroused a feeling of great fear in you at times?
- 87b Yes No ? Do you frequently experience nausea or vomiting or diarrhea?
- 88c Yes No ? Are you sometimes the leader at a social affair?
- 89d Yes No ? Are your feelings easily hurt?
- 90b Yes No ? Are you troubled much with constipation?
- 91c Yes No ? Do you ever cross the street to avoid meeting somebody?
- 92a Yes No ? Do you occasionally have conflicting moods of love and hate for members of your family?

- 93c Yes No ? If you come late to a meeting would you rather stand or leave than take a front seat?
- 94b Yes No ? Were you ill much of the time during childhood?
- 95d Yes No ? Do you worry over possible misfortunes?
- 96c Yes No ? Do you make friends readily?
- 97a Yes No ? Have your relationships with your mother usually been pleasant?
- 98d Yes No ? Are you bothered by the feeling that people are reading your thoughts?
- 99b Yes No ? Do you frequently have difficulty in breathing through your nose?
- 100c Yes No ? Are you often the center of favorable attention at a party?
- 101a Yes No ? Does either of your parents become angry easily?
- 102b Yes No ? Do you sometimes have shooting pains in the head?
- 103a Yes No ? Was your home always supplied with the common necessities of life?
- 104c Yes No ? Do you find that you tend to have a few very close friends rather than many casual acquaintances?
- 105a Yes No ? Was your father what you would consider your ideal of manhood?
- 106d Yes No ? Are you troubled with the idea that people are watching you on the street?
- 107b Yes No ? Are you considerably underweight?
- 108a Yes No ? Has either of your parents made you unhappy by criticizing your personal appearance?
- 109d Yes No ? Does criticism disturb you greatly?
- 110c Yes No ? Do you feel embarrassed if you have to ask permission to leave a group of people?
- 111b Yes No ? Do you frequently come to your meals without really being hungry?
- 112a Yes No ? Are your parents permanently separated?
- 113d Yes No ? Are you often in a state of excitement?
- 114c Yes No ? Do you keep in the background on social occasions?
- 115b Yes No ? Do you wear eyeglasses?
- 116d Yes No ? Does some particular useless thought keep coming into your mind to bother you?
- 117a Yes No ? Did your parents frequently punish you when you were between 10 and 15 years of age?
- 118c Yes No ? Does it upset you considerably to have a teacher call on you unexpectedly?
- 119b Yes No ? Do you find it necessary to watch your health carefully?
- 120d Yes No ? Do you get upset easily?
- 121a Yes No ? Have you disagreed with your parents about your life work?
- 122c Yes No ? Do you find it difficult to start a conversation with a stranger?
- 123d Yes No ? Do you worry too long over humiliating experiences?
- 124b Yes No ? Have you frequently been absent from school because of illness?
- 125d Yes No ? Have you ever been extremely afraid of something that you knew could do you no harm?
- 126a Yes No ? Is either of your parents very nervous?
- 127c Yes No ? Do you like to participate in festival gatherings and lively parties?
- 128d Yes No ? Do you have ups and downs in mood without apparent cause?
- 129b Yes No ? Do you have teeth that you know need dental attention?
- 130c Yes No ? Do you feel self-conscious when you recite in class?
- 131a Yes No ? Has either of your parents dominated you too much?
- 132d Yes No ? Do ideas often run through your head so that you cannot sleep?
- 133b Yes No ? Have you had any trouble with your heart or your kidneys or your lungs?
- 134a Yes No ? Have you often felt that either of your parents did not understand you?
- 135c Yes No ? Do you hesitate to volunteer in a class recitation?
- 136d Yes No ? Does it frighten you to be alone in the dark?
- 137b Yes No ? Have you ever had a skin disease or skin eruption, such as athlete's foot, carbuncles, or boils?
- 138a Yes No ? Have you felt that your friends have had a happier home life than you?
- 139b Yes No ? Do you have difficulty in getting rid of a cold?
- 140c Yes No ? Do you hesitate to enter a room by yourself when a group of people are sitting around the room talking together?

Intelligence quotients and typewriting I achievement
of thirty-one 11th and 12th grade pupils and
the calculation of their correlation

Pupils	Hornon- Nelson Intelli- gence Quotients	Marks in Type- writing I	RANK ORDER		Differ- ence	Differ- ence Squared
			Hornon- Nelson Intellig Quotients	Type- writing I Marks		
1	2	3	4	5	6	7
1	117	A	1	1	0	0
2	116	B-	2	15	13	169
3	114	A	3	3	0	0
4	113	D	4	30	26	676
5	113	A	5	2	3	9
6	111	C	6	16	10	100
7	111	A-	7	4	3	9
8	109	D	8	26	20	400
9	109	C	9	23	14	196
10	108	D	10	29	19	361
11	108	A-	11	5	6	36
12	107	D	12	26	14	196
13	106	B+	13	8	5	25
14	104	B	14	11	3	9
15	102	D	15	27	12	144
16	101	C	16	17	1	1
17	99	C	17	18	1	1
18	99	B+	18	9	9	81
19	98	A-	19	6	13	169
20	96	B	20	13	7	49
21	97	B	21	12	9	81
22	94	A-	22	7	15	225
23	94	D	23	31	8	64
24	94	B	24	14	10	100
25	92	C	25	20	5	25
26	89	C	26	24	2	4
27	87	C	27	19	8	64
28	85	C	28	22	6	36
29	83	C	29	21	8	64
30	78	B+	30	10	20	400
31	78	C-	31	25	6	36
Total						3,730

Rank correlation coefficient $.25 \pm .12$

Minnesota Clerical Test, Name Comparison and Typewriting I
Achievement of Thirty 11th and 12th Grade Pupils
and the Calculation of Their Correlation

Pupils	Minn. Clerical Test	Marks in Type- writing I	RANK ORDER		Differ- ence	Differ- ence Squared
			Minn. Clerical Test	Type- writing I Marks		
1	2	3	4	5	6	7
1	95	A	1	3	2	4
2	89	D	2	25	23	529
3	80	C	3	15	12	144
4	78	A-	4	5	1	1
5	73	B	5	11	6	36
6	70	B	6	12	6	36
7	66	D	7	28	21	441
8	63	B	8	10	2	4
9	60	B+	9	9	0	0
10	50	D	10	26	16	256
11	41	A	11	1	10	100
12	40	C	12	16	4	16
13	38	C	13	21	8	64
14	36	B	14	13	1	1
15	35	B+	15	8	7	49
16	34	A-	16	6	10	100
17	30	C	17	22	5	25
18	25	A-	18	4	14	196
19	25	D	19	30	11	121
20	21	A	20	2	18	324
21	19	C	21	17	4	16
22	18	B+	22	7	5	25
23	11	B-	23	14	9	81
24	10	C	24	23	1	1
25	7	C	25	19	6	36
26	6	D	26	29	3	9
27	6	C	27	20	7	49
28	5	C-	28	24	4	16
29	4	C	29	18	11	121
30	1	D	30	27	3	9
Total						2,810

Rank correlation coefficient .38 $\frac{1}{2}$.11

Minnesota Clerical Test, Number Comparison and Typewriting I
Achievement of Thirty 11th and 12th Grade Pupils
and the Calculation of Their Correlation

Pupils	Minn. Clerical Test	Marks in Type- writing I	RANK ORDER		Differ- ence	Differ- ence Squared
			Minn. Clerical Test	Type- writing I Marks		
1	2	3	4	5	6	7
1	91	B	1	12	11	121
2	90	A	2	3	1	1
3	71	B +	3	9	6	36
4	71	A	4	1	3	9
5	71	C	5	21	16	256
6	68	D	6	30	24	576
7	66	D	7	25	18	324
8	66	D	8	28	20	400
9	65	C	9	15	6	36
10	60	B	10	11	1	1
11	60	C	11	22	11	121
12	58	C	12	16	4	16
13	58	C	13	17	4	16
14	55	B	14	13	1	1
15	50	B +	15	7	8	64
16	46	B	16	10	6	36
17	45	A-	17	5	12	144
18	35	A-	18	6	12	144
19	34	D	19	26	7	49
20	29	D	20	29	9	81
21	25	A-	21	4	17	289
22	23	B-	22	14	8	64
23	20	A	23	2	21	441
24	18	C-	24	24	0	0
25	16	B +	25	8	17	289
26	12	C	26	20	6	36
27	11	C	27	18	9	81
28	10	C	28	19	9	81
29	8	D	29	27	2	4
30	8	C	30	23	7	49
Total						3,645

Rank correlation coefficient .20 $\frac{1}{2}$.12

Adjustment Inventory Scores (total) and Typewriting I
Achievement of Thirty 11th and 12th Grade Pupils
and the Calculation of Their Correlation

Pupils	Adjust- ment Inventory	Marks in Type- writing I	RANK ORDER		Differ- ence	Differ- ence Squared
			Adjust- ment Inventory	Type- writing I Marks		
1	2	3	4	5	6	7
1	6	C	1	15	14	196
2	15	C	2	19	17	289
3	18	D	3	29	26	676
4	20	D	4	30	26	676
5	22	A-	5	5	0	0
6	26	C	6	22	16	256
7	32	D	7	27	20	400
8	32	C-	8	24	16	256
9	33	D	9	28	19	361
10	34	B+	10	7	3	9
11	34	C	11	20	9	81
12	47	A-	12	6	6	36
13	48	B+	13	8	5	25
14	49	B	14	11	3	9
15	49	B+	15	9	6	36
16	52	C	16	16	0	0
17	52	B	17	10	7	49
18	55	A-	18	4	14	196
19	56	A	19	2	17	289
20	57	B-	20	14	6	36
21	58	A	21	1	20	400
22	59	A	22	3	19	361
23	60	B	23	12	11	121
24	62	C	24	17	7	49
25	74	C	25	21	4	16
26	79	D	26	25	1	1
27	82	C	27	23	4	16
28	83	D	28	26	2	4
29	89	C	29	18	11	121
30	94	B	30	13	17	289
Total						5,254

Rank correlation coefficient 17 $\frac{1}{2}$.125

Intelligence Quotients and Shorthand I Achievement
of Thirty-four 11th and 12th Grade Pupils
and the Calculation of Their Correlation

Pupils	Hennon- Nelson Intelli- gence Quotients	Marks in Short- hand I	RANK ORDER		Differ- ence	Differ- ence Squared
			Hennon- Nelson Intellig Quotients	Short- hand I Marks		
1	2	3	4	5	6	7
1	117	A	1	2	1	1
2	116	B +	2	7	5	25
3	116	D	3	26	23	529
4	115	B	4	10	6	36
5	114	A	5	4	1	1
6	114	A	6	1	5	25
7	111	B +	7	6	1	1
8	110	B -	8	18	10	100
9	109	D	9	28	19	361
10	109	C -	10	22	12	144
11	108	B -	11	19	8	64
12	107	B	12	16	4	16
13	107	B -	13	20	7	49
14	106	B -	14	17	3	9
15	104	C	15	21	6	36
16	102	A	16	5	11	121
17	102	F	17	30	13	169
18	102	F	18	31	13	169
19	102	B	19	12	7	49
20	101	B	20	13	7	49
21	99	B	21	9	12	144
22	98	C -	22	24	2	4
23	97	B -	23	23	0	0
24	97	F	24	31	7	49
25	96	F	25	33	8	64
26	94	B	26	14	12	144
27	94	A	27	3	24	576
28	94	D	28	28	0	0
29	93	C -	29	25	4	16
30	89	F	30	34	4	16
31	89	B	31	8	23	529
32	87	B	32	11	21	441
33	85	D	33	26	7	49
34	78	B	34	15	19	361

Total

4,347

Rank correlation coefficient $.35 \pm .11$

Minnesota Clerical Test, Name Comparison, and Shorthand I
Achievement of Thirty-five 11th and 12th Grade Pupils
and the Calculation of Their Correlation

Pupils	Minn. Clerical Test	Marks in Short- hand I	RANK ORDER		Differ- ence	Differ- ence Squared
			Minn. Clerical Test	Short- hand I Marks		
1	2	3	4	5	6	7
1	95	A	1	1	0	0
2	89	B	2	16	14	196
3	80	B 4	3	6	3	9
4	75	A	4	4	0	0
5	73	C-	5	23	18	324
6	70	C-	6	24	18	324
7	63	C	7	21	14	196
8	62	D	8	26	18	324
9	61	B	9	15	6	36
10	55	A	10	3	7	49
11	50	F	11	31	20	400
12	41	A	12	2	10	100
13	40	B-	13	18	5	25
14	40	B	14	13	1	1
15	38	D	15	27	12	144
16	34	C-	16	25	9	81
17	34	B	17	14	3	9
18	33	B-	18	20	2	4
19	31	F	19	30	11	121
20	30	C-	20	22	2	4
21	25	B-	21	19	8	64
22	25	D	22	28	6	36
23	22	B	23	8	5	25
24	19	B	24	9	15	225
25	19	B	25	10	15	225
26	18	B-	26	17	9	81
27	17	F	27	34	7	49
28	15	F	28	33	5	25
29	11	B	29	7	22	484
30	10	F	30	35	5	25
31	10	F	31	32	1	1
32	10	B	32	11	21	441
33	6	B	33	12	21	441
34	5	A	34	5	29	841
35	1	D	35	29	6	36
Total						5,346

Rank correlation coefficient .25 $\frac{1}{2}$.11

Minnesota Clerical Test, Number Comparison, and Shorthand I
Achievement of Thirty-four 11th and 12th Grade Pupils
and the Calculation of Their Correlation

Pupils	Minn. Clerical Test	Marks in Short- hand I	RANK ORDER		Differ- ence	Differ- ence Squared
			Minn. Clerical Test	Short- hand I Marks		
1	2	3	4	5	6	7
1	91	C-	1	24	23	529
2	90	A	2	1	1	1
3	72	B-	3	18	15	225
4	71	B	4	15	11	121
5	71	A	5	2	3	9
6	71	D	6	27	21	36
7	68	D	7	20	21	1
8	66	B	8	16	8	64
9	65	B+	9	6	3	9
10	65	A	10	3	7	49
11	63	A	11	4	7	49
12	60	C-	12	23	11	121
13	60	C-	13	22	9	81
14	58	B	14	13	1	1
15	58	B	15	9	6	36
16	56	C-	16	25	9	81
17	50	B-	17	17	0	0
18	46	C	18	21	3	9
19	39	D	19	8	11	121
20	35	D	20	14	6	36
21	34	F	21	31	10	100
22	30	F	22	33	11	121
23	29	B	23	10	13	169
24	28	B-	24	19	5	25
25	28	F	25	30	5	25
26	23	B-	26	20	6	36
27	23	B+	27	7	20	400
28	21	F	28	32	4	16
29	15	B	29	12	17	289
30	10	B	30	11	19	361
31	8	D	31	29	8	64
32	8	F	32	34	2	4
33	8	A	33	5	28	784
34	6	D	34	26	8	64
Total						4,882

Rank correlation coefficient $.25 \frac{1}{2}$.11

Adjustment Inventory Scores (total) and Shorthand I
Achievement of Thirty-three 11th and 12th Grade Pupils
and the Calculation of Their Correlation

Pupils	Adjust- ment Inventory	Marks in Short- hand I	RANK ORDER		Differ- ence	Differ- ence Squared
			Adjust- ment Inventory	Short- hand I Marks		
1	2	3	4	5	6	7
1	6	B +	1	6	5	25
2	20	D	2	28	26	676
3	26	C-	3	22	19	361
4	30	B-	4	18	14	196
5	32	D	5	29	24	576
6	33	A	6	3	3	9
7	34	B-	7	17	10	100
8	37	B	8	11	3	9
9	40	B	9	10	1	1
10	45	B	10	12	2	4
11	47	B	11	14	3	9
12	49	B	12	15	3	9
13	49	C-	13	23	10	100
14	52	B	14	13	1	1
15	52	C	15	21	6	36
16	54	F	16	32	16	256
17	54	F	17	31	14	196
18	55	B-	18	19	1	1
19	57	B +	19	7	12	144
20	58	A	20	2	18	324
21	58	A	21	4	17	289
22	59	A	22	1	21	441
23	60	C-	23	24	1	1
24	62	B	24	9	15	225
25	68	C-	25	25	0	0
26	73	B-	26	20	6	36
27	74	D	27	27	0	0
28	76	D	28	26	2	4
29	79	B	29	16	13	169
30	82	F	30	33	3	9
31	83	F	31	30	1	1
32	89	B	32	8	24	576
33	96	A	33	5	28	784

Total

5,568

Rank correlation coefficient $.21 \frac{4}{5}$.12

Intelligence Quotients and Office Machines Achievement
of Twenty 11th and 12th Grade Pupils and the
Calculation of Their Correlation

Pupils	Hemmon- Nelson Intelli- gence Quotients	Marks in Office Machines	RANK ORDER		Differ- ence	Differ- ence Squared
			Hemmon- Nelson Intellig Quotients	Office Mach. Marks		
1	2	3	4	5	6	7
1	124	A	1	2	1	1
2	122	B-	2	8	6	36
3	113	B-	3	9	6	36
4	113	C	4	16	12	144
5	112	A-	5	4	1	1
6	111	A	6	3	3	9
7	111	B	7	5	2	4
8	111	B	8	6	2	4
9	111	B-	9	10	1	1
10	110	A	10	1	9	81
11	106	B-	11	11	0	0
12	104	C	12	17	5	25
13	103	B-	13	12	1	1
14	103	C	14	15	1	1
15	102	B-	15	13	2	4
16	99	B-	16	14	2	4
17	96	C	17	18	1	1
18	83	D	18	20	2	4
19	82	B	19	7	12	144
20	74	C	20	19	1	1
Total						466

Rank correlation coefficient $.65 \pm .09$

Minnesota Clerical Test, Number Comparison, Scores and
Office Machines Achievement of Nineteen 11th and 12th
Grade Pupils and the Calculation of Their Correlation

Pupils	Minn. Clerical Test	Marks in Office Machines	RANK ORDER		Differ- ence	Differ- ence Squared
			Minn. Clerical Test	Office Mach. Marks		
1	2	3	4	5	6	7
1	84	A	1	3	2	4
2	83	A	2	2	0	0
3	73	C	3	15	12	144
4	71	C	4	17	13	169
5	66	B	5	6	1	1
6	58	C	6	16	10	100
7	57	B-	7	11	4	16
8	47	B-	8	10	2	4
9	38	B-	9	12	3	9
10	38	B-	10	7	3	9
11	35	A	11	1	10	100
12	35	A-	12	4	8	64
13	35	C	13	18	5	25
14	30	C	14	14	0	0
15	20	B-	15	8	7	49
16	20	B	16	5	11	121
17	16	B-	17	9	8	64
18	16	B-	18	13	5	25
19	6	D-	19	19	0	0
Total						904

Rank correlation coefficient $.21 \pm .15$

Minnesota Clerical Test, Name Comparison, Scores and
Office Machines Achievement of Nineteen 11th and 12th
Grade Pupils and the Calculation of Their Correlation

Pupils	Minn. Clerical Test	Marks in Office Machines	RANK ORDER		Differ- ence	Differ- ence Squared
			Minn. Clerical Test	Office Mach. Marks		
1	2	3	4	5	6	7
1	75	A-	1	4	3	9
2	60	B-	2	10	8	64
3	58	C	3	16	13	169
4	55	B-	4	11	7	49
5	55	C	5	15	10	100
6	46	A	6	2	4	16
7	30	A	7	1	6	36
8	36	B	8	6	2	4
9	35	A	9	3	6	36
10	35	C	10	11	4	16
11	35	B-	11	13	2	4
12	31	B-	12	9	3	9
13	29	B-	13	7	6	36
14	28	B-	14	12	2	4
15	21	B-	15	8	7	49
16	18	C	16	17	1	1
17	16	C	17	10	1	1
18	10	B	18	5	13	169
19	1	D	19	19	0	0
Total						716

Rank correlation coefficient $.37 \pm .135$

Adjustment Inventory Scores (total) and Office Machines
Achievement of Nineteen 11th and 12th Grade Pupils and
the Calculation of Their Correlation

Pupils	Adjust- ment Inventory	Marks in Office Machines	RANK ORDER		Differ- ence	Differ- ence Squared
			Adjust- ment Inventory	Office Mach. Marks		
1	2	3	4	5	6	7
1	20	B-	1	7	6	36
2	30	A	2	3	1	1
3	39	B	3	5	2	4
4	42	B-	4	9	5	25
5	44	B-	5	10	5	25
6	46	C	6	15	9	81
7	47	B-	7	11	4	16
8	48	B-	8	13	5	25
9	50	A-	9	4	5	25
10	50	D	10	19	9	81
11	53	A	11	1	10	100
12	53	C	12	17	5	25
13	56	B-	13	8	5	25
14	57	A	14	2	12	144
15	58	B-	15	12	3	9
16	67	C	16	18	2	4
17	69	C	17	16	1	1
18	77	C+	18	14	4	16
19	94	B	19	6	13	169
Total						665

Rank correlation coefficient $.42 \frac{1}{2}$.13

Intelligence Quotients and Minnesota Clerical Test, Number
Comparison, of Sixty-one 11th and 12th Grade Pupils
and the Calculation of Their Correlation

Pupils	Henson- Nelson Scores	Minn. Clerical No. 1 Number	RANK ORDER		Differ- ence	Differ- ence Squared
			Henson- Nelson	Minn. Clerical No. 1 Number		
1	2	3	4	5	6	7
1	124	83	1	4	3	9
2	122	38	2	32	30	900
3	117	71	2	9	6	36
4	116	23	4	45	41	1681
5	116	6	5	60	55	3025
6	115	29	6	41	35	1225
7	114	63	7	17	10	100
8	114	90	8	2	6	36
9	113	29	9	40	31	961
10	113	20	10	47	37	1369
11	113	25	11	43	32	1024
12	113	73	12	5	7	49
13	112	35	13	35	22	484
14	111	84	14	3	11	121
15	111	20	15	48	33	1089
16	111	65	16	15	1	1
17	111	16	17	50	53	1089
18	110	35	18	34	10	256
19	110	72	19	6	13	169
20	109	8	20	57	37	1369
21	109	60	21	19	2	4
22	108	66	22	13	9	81
23	108	25	23	42	19	361
24	107	66	24	12	12	144
25	107	23	25	44	19	361
26	106	50	26	26	0	0
27	106	47	27	27	0	0
28	104	46	28	28	0	0
29	104	58	29	22	7	49
30	103	71	30	10	20	400
31	103	30	31	39	8	64
32	102	8	32	59	27	729
33	102	38	33	31	2	4
34	102	45	34	37	3	9
35	102	21	35	46	11	121
36	102	15	36	52	16	256
37	101	58	37	20	17	289
38	99	58	38	21	17	289

1	2	3	4	5	6	7
39	99	16	39	51	12	144
10	98	15	40	29	11	121
11	98	91	41	1	40	1600
12	97	60	42	18	24	576
13	96	30	43	38	5	25
14	96	71	44	0	36	1296
15	94	35	45	33	12	144
16	94	65	46	16	30	900
17	94	68	47	11	36	1296
18	94	55	48	25	23	529
19	93	56	49	24	25	625
20	92	10	50	53	5	25
21	89	8	51	58	7	49
22	89	39	52	30	22	484
23	87	10	53	56	3	9
24	87	11	54	54	0	0
25	85	57	55	23	32	1024
26	83	12	56	53	3	9
27	83	6	57	61	4	16
28	82	66	58	14	44	1936
29	78	71	59	7	52	2704
30	78	18	60	49	11	121
31	74	35	61	36	25	625
Total						32,412

Rank correlation coefficient $.143 \pm .09$

Intelligence Quotients and Minnesota Clerical Test, Name
Comparison, of Sixty-two 11th and 12th Grade Pupils and
the Calculation of Their Correlation

Pupils	Hornon- Nelson	Minn. Clerical No. 2 Name	RANK ORDER		Differ- ence	Differ- ence Squared
			Hornon- Nelson Scores	Minn. Clerical No. 2 Name		
1	2	3	4	5	6	7
1	124	46	1	19	18	324
2	122	29	2	36	34	1156
3	117	41	3	20	17	289
4	116	11	4	49	45	2025
5	116	62	5	11	6	36
6	115	19	6	43	37	1369
7	114	75	7	5	2	4
8	114	95	8	1	7	49
9	113	6	9	55	40	2116
10	113	21	10	41	31	961
11	113	31	11	33	22	484
12	113	55	12	17	5	25
13	112	75	13	6	7	49
14	111	35	14	27	13	169
15	111	10	15	52	37	1369
16	111	80	16	3	13	169
17	111	31	17	34	17	289
18	110	39	18	23	5	25
19	110	40	19	21	2	4
20	109	1	20	62	42	1764
21	109	30	21	35	14	196
22	108	66	22	9	13	169
23	108	25	23	30	15	225
24	107	69	24	2	22	484
25	107	33	25	32	7	49
26	106	18	26	44	18	324
27	106	60	27	13	14	196
28	104	63	28	10	18	324
29	104	58	29	14	15	225
30	103	35	30	28	2	4
31	103	55	31	15	16	256
32	102	5	32	58	26	676
33	102	25	33	37	4	16
34	102	50	34	18	16	256
35	102	10	35	51	16	256
36	102	6	36	57	21	441
37	101	40	37	22	15	225
38	99	19	38	42	4	16

1	2	3	4	5	6	7
39	99	35	39	29	10	100
40	98	70	40	4	36	1296
41	98	70	41	8	33	1089
42	97	73	42	7	35	1225
43	97	15	43	48	5	25
44	96	17	44	46	2	4
45	96	10	45	45	0	0
46	94	34	46	31	15	225
47	94	53	47	16	31	961
48	94	25	48	39	9	81
49	94	36	49	26	23	529
50	93	34	50	30	20	400
51	82	7	51	34	3	9
52	89	10	52	38	2	4
53	86	22	53	40	17	289
54	87	10	54	33	1	1
55	87	4	55	60	5	25
56	85	38	56	24	32	1024
57	83	6	57	36	1	1
58	83	1	58	61	3	9
59	82	36	59	24	34	1156
60	70	60	60	12	48	2304
61	70	5	61	59	2	4
62	74	16	62	47	15	225
Total						28,000

Rank correlation coefficient $.295 \pm .08$

Minnesota Clerical Test, Name Comparison, and Minnesota Clerical
Test, Number Comparison, of Sixty one 11th and 12th Grade
Pupils and the Calculation of Their Correlation

Pupils	Minn. Clerical Number	Minn. Clerical Name	RANK ORDER		Differ- ence	Differ- ence Squared
			Number	Name		
1	2	3	4	5	6	7
1	91	70	1	8	7	49
2	90	95	2	1	1	1
3	84	35	3	27	24	576
4	83	36	4	19	15	225
5	73	35	5	17	12	144
6	72	40	6	21	15	225
7	71	60	7	12	5	25
8	71	18	8	45	37	1369
9	71	41	9	20	11	121
10	71	38	10	24	14	196
11	68	25	11	39	28	784
12	66	89	12	2	10	100
13	66	66	13	9	4	16
14	66	36	14	25	11	121
15	65	80	15	3	12	144
16	65	35	16	16	0	0
17	63	75	17	5	12	144
18	60	73	18	7	11	121
19	60	30	19	35	16	256
20	58	40	20	22	2	4
21	58	19	21	42	21	441
22	58	58	22	14	8	64
23	57	55	23	15	8	64
24	56	34	24	30	6	36
25	55	36	25	26	1	1
26	50	18	26	44	10	324
27	47	60	27	13	14	196
28	46	63	28	10	18	324
29	45	78	29	4	25	625
30	39	22	30	40	10	100
31	38	25	31	37	6	36
32	38	29	32	36	4	16
33	35	34	33	31	2	4
34	35	39	34	23	11	121
35	35	75	35	6	29	841
36	35	16	36	47	11	121
37	34	50	37	18	19	361
38	30	17	38	46	8	64

1	2	3	4	5	6	7
39	30	35	39	28	11	121
10	29	6	10	51	14	196
11	28	19	11	54	3	4
12	25	23	12	53	14	16
13	23	31	13	33	10	100
14	23	33	14	32	12	144
15	23	11	15	18	3	9
16	21	10	16	50	4	16
17	20	21	17	41	6	36
18	19	10	18	51	3	9
19	18	5	19	51	3	81
20	16	11	20	24	9	256
21	16	35	21	28	16	484
22	15	6	22	36	22	16
23	13	6	23	35	4	4
24	11	6	24	35	2	25
25	10	7	25	33	3	4
26	10	10	26	32	2	16
27	8	1	27	61	4	16
28	8	10	28	49	4	81
29	8	5	29	37	9	4
30	6	62	30	11	2	2401
31	6	1	31	60	49	1
Total						12,400

Rank correlation coefficient $.6722 \pm .05$

Intelligence Quotients and Adjustment Inventory Scores (total)
of Sixty 11th and 12th Grade Pupils and the Calculation
of Their Correlation

Pupils	Henson- Nelson Scores	Bell Adjust- ment Inventory	RANK ORDER		Differ- ence	Differ- ence Squared
			Henson- Nelson	Bell Adjust- ment Inventory		
1	2	3	4	5	6	7
1	124	57	1	39	38	1444
2	122	20	2	4	2	4
3	117	58	3	12	39	1521
4	116	57	4	40	36	1296
5	116	70	5	52	47	2209
6	115	40	6	19	13	169
7	114	59	7	13	36	1296
8	114	59	8	44	36	1296
9	113	18	9	3	6	36
10	113	56	10	38	28	784
11	113	55	11	37	26	676
12	113	46	12	23	11	121
13	112	50	13	29	16	256
14	111	30	14	8	6	36
15	111	39	15	18	3	9
16	111	6	16	1	15	225
17	111	42	17	20	3	9
18	110	53	18	33	5	25
19	110	30	19	9	10	100
20	109	33	20	10	10	100
21	109	28	21	7	14	196
22	108	33	22	12	10	100
23	108	55	23	36	13	169
24	107	79	24	54	30	900
25	107	73	25	50	25	625
26	106	34	26	14	12	144
27	106	44	27	21	6	36
28	104	52	28	32	4	16
29	104	69	29	49	20	400
30	103	77	30	53	23	529
31	103	47	31	25	6	36
32	102	96	32	60	28	784
33	102	58	33	41	8	64
34	102	83	34	56	22	484
35	102	54	35	35	0	0
36	102	45	36	22	14	196
37	101	52	37	31	6	36
38	99	62	38	46	8	64

1	2	3	4	5	6	7
39	99	48	39	26	13	169
40	98	22	40	6	36	1296
41	98	60	41	45	4	16
42	97	49	42	27	15	225
43	96	53	43	24	9	81
44	96	17	44	24	20	400
45	94	33	45	13	32	1024
46	94	20	46	13	41	1681
47	94	01	47	33	12	144
48	94	68	48	48	0	0
49	93	15	49	2	47	2209
50	92	82	50	38	3	9
51	89	38	51	17	34	1156
52	89	37	52	16	36	1296
53	87	89	53	57	4	16
54	87	74	54	21	3	9
55	85	34	55	15	46	1600
56	83	50	56	36	28	676
57	83	94	57	38	1	1
58	82	49	58	28	30	900
59	78	32	59	11	48	2304
60	74	67	60	47	13	169
Total						31,788

Rank correlation coefficient $.117 \pm .09$