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## The Use of the Individual Parts of the Aptitude Test for Predicting Success of Students

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## THE USE OF THE INDIVIDUAL PARTS OF THE APTITUDE TEST FOR PREDICTING SUCCESS OF STUDENTS

GERTRUDE M. COX

The Iowa State College Aptitude Test is composed of seven parts or sub-tests. These sub-tests have been used in predicting the success of the students during their first quarter in college.

The individual, or sub-tests, may be indicated as follows:

- (1) Reading for speed and understanding.
- (2) Arithmetical reasoning.
- (3) Determination of word relationship.
- (4) Reasoning as indicated in number sequence.
- (5) Memory for names and faces.
- (6) Artificial language as an index to linguistic facility.
- (7) Reasoning as shown in the equation completion test.

The records of 340 Engineering students, for the fall of 1929, were used for this study. Their grades in Chemistry, English and Mathematics were correlated with the seven individual tests. These correlations have been used in determining what a student should do in such subjects as Chemistry, English and Mathematics. Table I shows the relative value of the various sub-tests as indicators of the student's probable success in these subjects.

*Table I*

CHEMISTRY	ENGLISH	MATHEMATICS
2	2 and 6	2
6	5	6
7	7	4
1	1	7
4		1

In Chemistry, it seems that the most importance should be attached to test two. In order of importance, but not of equal value, follow tests six, seven, one and four. In English, most significance should be placed on tests two and six. Some consideration should be given to tests five, seven and one. When checking ability in Mathematics, it seems that most consideration should be given to test two. Tests six, four, seven and one each contribute a small amount. The tests omitted have little value in predicting the students' success in these subjects. Taking this combination of seven

tests, most of the interpretation is placed upon tests two, arithmetical reasoning, and six, artificial language. Such a group of tests give the students several chances to show what ability they have.

Table II shows the correlation between the seven individual parts of the aptitude test with Chemistry, English, and Mathematics.

Table II

	1	2	3	4	5	6	7	TOTAL SCORE
Chemistry	.27	.37	.17	.19	.13	.36	.29	.41
English	.24	.40	.14	.21	.32	.40	.31	.47
Mathematics	.31	.55	.20	.40	.16	.47	.39	.56

All of the correlations in this table are significant. In the last column, it should be noted that the test as a whole does give a good measure of the ability of the student to do the work in Mathematics, English and Chemistry which is required at Iowa State College during the first quarter of the freshman year.

Table III is a tabulation of the means, standard deviations, total possible scores, ranges that include fifty percent of the cases and critical scores.

Table III

		1	2	3	4	5	6	7	TOTAL SCORE
A	Means	18.01 ±.20	13.58 ±.21	17.54 ±.20	10.74 ±.18	17.63 ±.31	19.23 ±.31	19.56 ±.26	116.64 ±1.05
	Standard deviation	5.54	5.82	5.42	4.97	8.59	8.52	6.99	28.62
C	Total possible score	30	40	30	20	50	40	40	250
D	Range which covers 50% of cases	14-22	10-17	14-21	7-14	12-23	13-25	15-24	
E	Critical score	11	6	10	4	6	8	10	

The means with their probable errors, standard deviations and total possible scores are self-explanatory. In section D are given the ranges that cover fifty percent of the scores actually made. In section E are given the lower critical scores which have arbitrarily been set at two probable errors. Below is given the percentage of those students, falling below the critical scores on the tests listed, who failed in the first quarter's work.

Test 6.....	50%
Test 2.....	44%
Tests 2 and 6.....	70%

Tests 2, 6 and 7.....	100%
Tests 2, 6 and 1.....	100%
Tests 2, 6 and 4.....	100%

By taking into consideration the scores made on the seven, individual tests, in addition to the total score, and with the proper use of tables I and III, it is possible for the counselors and administrative officers to advise the student with a great deal of assurance. He can be told how he stands in relation to others and he should be shown that he probably has or does not have the ability to do successful work along certain lines.

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## THE CORRELATION OF IMPLICIT AND EXPLICIT BEHAVIOR AND THE PRESENCE OF SEX DIFFERENCES IN LEARNED RESPONSES

ALVAH R. LAUER

The argument for a general integrating factor in behavior has largely been discounted on the basis of measurements of explicit responses. In most cases such samplings of behavior are subject to influence of training, either directly or indirectly. A criticism of such conclusions is offered.

It was the purpose of this study to measure and compare samplings of both implicit and explicit responses. Learned and unlearned reaction patterns were studied. Intercorrelations of the various types of responses were made using data from 123 subjects. The reliabilities of the measures varied from .37 to .92 but were mostly above .75. Sex differences were noted and the correlations of men and women were computed separately. Multiple correlations of different combinations led to a method of analysis for multiple variable problems.

There is some evidence of a general organic condition which determines the nature of the response. Sex differences are marked in certain types of learned behavior, but were not found in specific types of unlearned behavior. The results are suggestive of the strong influence of environment on certain patterns of response.

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