A TECHNICAL REPORT ON

Grades in ONI Language Course and the Prediction of these grades from Miller Analogies Score

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FOREWORD

This technical report was prepared as a service to the ONI School. Instruction in foreign languages is one of the areas of training for which they are responsible. They felt that their program for selecting students was not as good as they would like, and inquired of the medical-psychological team from the Neuropsychiatry Branch, Bureau of Medicine and Surgery, if they could help them out through the use of some of the materials they were collecting at each assessment run. Fortunately we had been collecting systematically, data on the results of the Miller Analogies Test; a test that measures verbal ability. It has a range adequate to measure successfully, the verbal aptitude of superior adults.

The School furnished us with grades achieved in the language course by officers who had gone through the Neuropsychiatry Assessment Program. We ran the correlations reported herein. Briefly, the correlations were of sufficient magnitude to justify the use of the Miller Test results as a basis for assigning students to the Language School. The over-all correlation between grades in School and Miller scores was .48, and is of the same magnitude as those observed between scholastic aptitude tests and grades learned by college freshmen. A procedure is briefly described for selecting students for the Language School on the basis of Miller scores.

RESULTS

For each candidate passing the CNI Language Course three grades were available: an oral grade, a written grade, and a final grade. The relationship between oral and written grades was quite high, yielding a correlation of .843.

Table 1

Mean Grades in Languages

Language	Mean Final Grade	N
Russian	4.48	29
Italian	4.47	13
French	4.78	14
German	6.00	12
Spanish	5.00	6
Persian	5.80	5
Swedish	5.00	5
Arabic	5.40	5
Chinese	6.00	5
Turkish	5.00	3
Portugese	0.00	1

Table 1 presents mean final grades for each language taught and the number of cases entering into the determination of each mean. Those means are presented in terms of numerical values based upon setting A equal to 8, A- to 7, B+ to 6, B to 5, B- to 4, C+ to 3, C to 2, C- to 1 and failure to 0. It appears that not all languages were graded equivalently; it may be noted, for instance, that higher grades were received in German than in any other language.

Table 2

Correlations between Miller Analogies Scores and Grades in Languages

Languages	Correlation	N	P
Russian	.372	26	>.05
Italian	.386	15	>.05
French	.762	13	<.01
German	.789	12	<.01
Others*	.410	27	<.05
All Languages	.482	93	<.01

* Includes Spanish, Arabic, Swedish, Persian, Chinese, Turkish and Portugese.

Table 2 presents the correlations between scores on the Miller Analogies Test and final grades in the ONI Language Courses. These correlations are computed separately for Russian, Italian, French, and German, and for all other languages combined. Separate correlations for Spanish, Arabic, Swedish, Persian, Chinese, Turkish, and Portugese are not feasible due to the small number of men who have been enrolled in each of these courses. The correlation of Miller scores with grades in all languages is also presented.

All correlations indicate a definite relationship between scores on this test and success in the language courses. Two correlations, those for Russian and Italian, do not quite reach statistical significance; however, it seems likely that this is a function of the small number of cases involved rather than a lack of actual relationship. The correlations between Miller scores

and grades in French and German are higher than for other languages. This may be due to chance fluctuation. Another possible explanation of these higher correlations may lie in the greater familiarity of these languages to English speaking people.

Of particular interest is the correlation of .482 between scores on the Miller Analogies Test and grades in all languages. This correlation is of sufficient magnitude and stability to permit the recommendation of this test as a tool for the selection of candidates for language courses. Figure 1* shows the percentages of those receiving the specified Miller Analogies score who are predicted to pass the language course at various letter grade levels. Its use may be illustrated by an example. Let us assume that we wish to determine the likelihood of achieving a grade of B- or better for a candidate whose Miller Analogies score is 40. We find the score of 40 along the base line, determine the height of the "B- or better" curve at this point and determine from the ordinate that the likelihood that this candidate's grade will be B- or better is .50. In this manner one may determine the likelihood of any candidate's achieving at least any specified minimum grade. The likelihood that a candidate will fail the course may be determined by subtracting his likelihood of achieving C- or better from 1.00.

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*Figure 1 was constructed through the use of expectancy formulae given by Bittner, R. H. & Wilder, C. E. Expectancy Tables: a method of interpreting correlation coefficients. J. exp. Educ., 1946, 14, 245-252.

Prediction of Level of Success in CNI Language Courses

on the Basis of Miller Analogies Scores