A STUDY OF SCHOLASTIC APTITUDE, READING AND LISTENING ABILITY, AND GRADE POINT AVERAGE, AS PREDICTORS OF ACHIEVEMENT IN A FIRST COURSE IN FOREIGN LANGUAGE

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INTRODUCTION

A major problem associated with learning a second language is whether or not special abilities and disabilities involved in learning a foreign language can be determined and tested so as to predict future success in this subject (10, p. 881).

Various committees, organizations, foundations, government agencies, and educators for years have investigated the problems involved in the learning of a foreign language. Major investigations in learning a foreign language are as follows:

1924 Scientific Survey of Language Learning Field by Committee on Direction and Control of Modern Language Study, financed by the Carnegie Corporation (10, p. 863).

1937 The Stanford Language Arts Investigation by Kaulfers, conducted by the Modern Language Association, financed by the Rockefeller Foundation (48, p. 154).

1941 The Intensive Language Programs sponsored by the Committee of Language Programs of the American Council of Learned Societies (1, p. 865).

1942 The American Council of Learned Societies, financed by Armed Forces (10, p. 865).

1944 The Chicago Investigation of the Teaching of a Second Language, financed by the Rockefeller Foundation (10, p. 866).

1953 Six Year Foreign Language Program, sponsored by the Modern Language Association, financed by the Rockefeller Foundation (10, p. 867).

1963 Under-Achievement in Foreign Language Learning,

> financed by United States Department of Health Education, and Welfare (70, p. 1).

For forty years, investigators have tried to relate test results and achievement in foreign language courses. However, only a few of the studies have attempted to use several test results in combination to predict grades in foreign language.

There are, of course, many questions which a student or his counselor might have regarding possible grades in foreign language. Such questions might be:

> Is it likely that the student would receive a grade which would be at least a passing grade?
>
> Is it likely that the student would receive a grade at least as good as those he has been getting in other courses?
>
> Is it likely that the student would receive a better grade if he were to take some other course instead of a foreign language course?

In anticipation of questions like these, it appears that the ability to predict grade in a first course in foreign language would be quite helpful to the school counselor and the student.

REVIEW OF THE LITERATURE

In the present study, the literature showing the relationship between learning a foreign language and intelligence, reading ability, listening ability, and grade point average has been reviewed in four sections, each

section pertaining to one of these factors.

Literature On The Use Of Intelligence Tests To Predict Success In The Learning Of A Foreign Language

There are many articles in the literature on intelligence as a factor in foreign language learning. Intelligence is an abstract concept. In most of the literature intelligence tests are thought of as tests of general aptitude or scholastic aptitude. When so regarded they are most typically used in predicting achievement in school, college or training programs (57, p. 13). The use of generalized tests in predicting a grade in a foreign language dates back to the large scale testing programs which were begun soon after World War I when the Alpha and Beta tests were released for public use and the general public became IQ-conscious (2, p. 12).

Early studies. In a survey of the literature on foreign language covering the period from 1900 to 1930, Kaulfers found 117 coefficients of correlation with a mean of .356 from studies of achievement in foreign language and intelligence tests (45, p. 591). He further studied the effect of IQ on grades of one thousand high school students of foreign languages and found that boys, as a group, require ten per cent more intelligence than girls to achieve on the same level in Spanish (46, p. 164).

In 1925 Jordan advocated that if pupils of low linguistic ability cannot be segregated in a special class with others of their kind, it would be better to guide them into other subjects (75, p. 299). "If the Terman Group Test of Mental Abilities is used, for prognosis, those pupils with IQ's below 100 might be told that the probability of success is not quite even, as about sixty per cent of such pupils can be expected to do unsatisfactory work" (42, p. 546). Terman has stated that pupils with IQ's of 90 should not elect such subjects as Latin (42, p. 545).

Comparison of investigations using intelligence test scores. Studies were made in an attempt to determine whether or not success in learning a foreign language may be predicted by the student's intelligence score on a standardized test. For ten of these studies, the names of the investigators, the languages investigated, and the coefficients of correlation showing the relationship between an intelligence test and a grade in foreign language is shown in Table I.

It is seen from Table I that variations in number, sex, and the specific foreign language used make a comparison of the studies difficult. The early investigations made by Jordan, Kaulfers, and Tallent, employed the Terman

TABLE I

RELATIONSHIP BETWEEN INTELLIGENCE TEST SCORES AND GRADE IN FOREIGN LANGUAGE

Year	Investigation	Language	Number	Coefficient of correlation		
				Boys	Girls	Both
1925	Jordan (75, p. 299)	Unspecified	108			.51
1927	Kaulfers (47, p. 42)	Spanish	149	.425	.531	
1938	Tallent (69, p. 160)	German	180			.211
1938	Seagoe (77, p. 639)	Unspecified	120			.529
1939	Spoerl (80, p. 431)	German	38	.123	.629	
1953	Morgan (69, p. 161)	Russian	50-70			.60
1955	Dunkel (28, p. 26)	French	150			.28
1957	Jacobs (39, p. 337)	Unspecified	95	.023	.529	
1957	Hascall (38, p. 365	Spanish German French Latin	800 Approx.	.465	.403	
1962	Pimsleur, Sundland, and McIntyre (70, p. 35)	French Spanish	850			.46

Group Test of Mental Abilities. The Terman-McNemar Test of Mental Abilities was used by Jacobs and the Herman-Nelson Test of Mental Abilities was used by Spoerl and Morgan. Hascall's investigation was made with the Otis Self-Administering Test of Mental Ability. Seagoe took the mean of three intelligence tests for his study, the Otis Self-Administering Test of Mental Ability, the Terman Group Test, and the Kuhlmann-Anderson Test. Dunkel and Pimsleur did not specify which test they had used.

The groups studied ranged from third grade pupils in the elementary school, investigated by Dunkel, to adults, studied by Morgan. Seagoe's research was conducted on junior high school students. Jordan, Kaulfers, Jacobs, Hascall, and Pimsleur investigated high school students studying a foreign language, while Tallent and Spoerl tested college students.

In Table I, the coefficients of correlation ranged from .023 fround by Jacobs for high school boys studying foreign languages to .629 found by Spoerl for high school girls. The studies were in general agreement about the existence of a positive relationship between learning ability and intelligence.

Investigations using Differential Aptitude Index test scores. Two recent studies indicate that the predictability

of the Differential Aptitude Test is superior to predictions made by IQ scores on intelligence tests.

In the Cincinnati public high schools, predictive variables were correlated with grades in foreign language courses. The results of this investigation were:

	Girls	Boys
Differential Aptitude Test		
Numerical Ability	.633	.485
Verbal Reasoning	.421	.051
Terman-McNemar Test of Mental Ability	.529	.023

In general, the prediction was markedly better for girls than for boys. The relationship between grade in foreign language and boys' test scores on the Numerical Ability Test and the Terman-McNemar Test of Mental Ability of .051 and .023 respectively was too low to be predictive (39, p. 337).

In a similar study, Hascall found the best predictors of success in foreign language courses in the White Plains, New York public schools were several of the Differential Aptitude Tests, the Stanford Achievement Tests and teacher's marks in previous English courses. Hascall found coefficients of correlation of a grade in a first course in French, German, Latin or Spanish with Differential Aptitude Test and the Otis intelligence test as follows:

	Girls	Boys
Differential Aptitude Test		
Numerical Ability	.483	.574
Verbal Reasoning	.421	.525
Otis Self-Administering Test of Mental Ability (38, p. 363)	.403	.465

The Differential Aptitude Test Manual gives the following summary of validity coefficients between Differential Aptitude Test scores and high school course grades in foreign languages: Verbal Reasoning correlation coefficients range from -.02 to .64. Numerical Ability correlation coefficients range from .10 to .55 (7, p. 48).

Recent studies. Lack of success in foreign language learning occurs among gifted students as well as among less bright learners. This problem was recently investigated by Dunkel and Pillet (70, p. 4). Earlier, Terman found this to be true in his research over a period of many years, with gifted children.

The results of the studies of many researchers who have tried to determine the relationship between intelligence and scholastic achievement in a foreign language were summed up recently by Pimsleur, "It is precisely because lack of ability in foreign language does not seem to correlate with intelligence that the problem is such a frustrating one." Verbal intelligence appears to correlate about

.45 with foreign language achievement. A correlation of .45 means that it accounts for twenty per cent of the variance in foreign language achievement. There still remains eighty per cent to be explained by other factors (69, p. 163). It should be pointed out that the eighty per cent would, of course, include lack of linearity in the relationship between the variables and probably some deviation from perfect correlation due to the fact that different scales were used to measure intelligence and language achievement.

Literature On The Use Of Reading Tests To Predict Success In The Learning Of A Foreign Language Due To Emphasis Placed On Reading Skills

The Coleman Report of 1927, sponsored by the American Council on Education, concluded that language students needed to acquire reading ability to learn a foreign language (74, p. 239). The author of the report pointed out that there is close correspondence between limited reading experience in both English and a foreign language and poor attainment in learning a foreign language (10, p. 863). As a result of the Coleman Report, teachers of foreign language stressed reading comprehension as a method of teaching foreign language. Reading achievement tests were used to measure a student's reading ability. Traxler declared that "...reading comprehension test scores have considerable

value in predicting aptitude of the study of foreign languages" (83, p. 58).

The value of reading comprehension in learning a foreign language. In a study of fifteen institutions, from 1930 to 1933, Coleman found that the more material read, the higher the scores on the vocabulary and silent reading sections of the American Alpha French Test. Students who had low scores in reading English tended to have low scores on the reading examination in French (10, p. 864). Bond used the reading method in an experiment in college French at the University of Chicago, and found that students' scores on the American Council Tests surpassed the established norms (10, p. 864). However, other experiments including experiments in the Milwaukee high schools, from 1929 to 1932, demonstrated that the experimental groups which had reading comprehension as their objective made significantly poorer results than the national norms established on the American Council Alpha French Tests (10, p. 864).

Seagoe and Manuel found that reading comprehension was just one factor in the prediction of success in a foreign language. Seagoe found that the correlation coefficient between course grades in foreign language and the Stanford Reading test was .49. For a sample of 120 junior

high school students, he determined that reading achievement was less valid than either general intelligence tests or language prognosis tests (77, p. 635).

Having determined a correlation coefficient of .59 between Cooperative Inter-American Tests of Reading scores in English and Spanish, Manuel concluded that the correlation of .59 was quite substantial, but sufficiently low to show that achievement in reading English is but one of the factors associated with achievement in reading Spanish as a second language. The study was made on 232 second year college Spanish students (59, p. 436).

Traxler reported that the average reading score obtained from the Stanford Achievement Test could be used as a predictor of achievement in French (84, p. 75). He reported a correlation coefficient of .51 showing this relationship. He stated that the use of tests designed for more general measures of ability such of reading ability, tests of spelling ability, and tests of scholastic aptitude are more practical for predicting success in a foreign language than is the use of foreign language prognostic tests (84, p. 73).

Literature On The Oral-Aural Method Of Learning A Foreign Language

At the present time a new emphasis is being placed

on the method of teaching a foreign language. The reading method of language learning was emphasized in high schools until shortly after World War II. Since then, a new method, oral-aural learning has been emphasized (10, p. 882).

Modern language laboratories are now used in the schools. According to Pimsleur, new tests are needed to predict a student's future performance in foreign language learning due to the oral-aural emphasis (72, p. 634). The literature related to the oral-aural emphasis in foreign language learning is reviewed in two parts. One part includes the teaching method, and the other part discusses listening tests.

Literature on the oral-aural teaching method. The advantages of the oral-aural method of teaching a foreign language were pointed out in the report of the 1944 Chicago Investigation of Second Language Teaching which was undertaken to compare experimental classes stressing oral-aural skills with conventional classes (10, p. 866). It appears that when a student is introduced to the oral habit first, he soon learns that the foreign language is a tool, an instrument for comprehension and expression (74, p. 239). Thus, he develops reading readiness. This fact was pointed out by an investigation made at the time of the second World War. In that investigation, studies were made on why

some teachers were successful and others unsuccessful in teaching illiterate people in Latin America to read Spanish. It was determined that successful students of reading in the literacy campaign were those who were learning to read their spoken language (74, p. 239).

A recent investigation of the theory that the more time pupils spend in listening and speaking a foreign language, the better able they are to read it was conducted by Allen at Ohio State University. Students who spent twenty per cent of their time listening and speaking French or Spanish in the laboratory achieved significantly higher scores on a battery of reading, vocabulary, and grammar tests than did the classes which were denied the use of the laboratory (1, p. 338). Systematic instruction in auditory perception and speech production appears to make a significant contribution to reading achievement (8, p. 365).

Literature on the oral-aural method tests. The history of constructing tests to predict the listening aptitude of students in foreign language learning began in 1949 when Bottke started work on a test of oral-aural aptitude for language study. He was concerned about the verbal aspects of previous aptitude tests. The test he constructed included sound differentiation, vowel timbre, general hearing and ability to mimic. This study was the predecessor

of the present Psi Lambda Foreign Language Aptitude Battery constructed by Carroll and Sapon in 1955 (10, p. 881). The Modern Language Aptitude Test, constructed by these authors, appeared in 1959. This test utilizes tape recorded materials as well as pen-and-paper materials to assess the capacity of the student for learning any foreign language.

Auditory factors in foreign language learning. Carroll and Pimsleur have recognized the importance of listening comprehension as a factor in the successful completion of a course in a foreign language. Carroll has factored out Sound-Symbol Association known as Factor W or Word Fluency as one of the seven factors which play a significant role in foreign language learning (19, p. 18). Pimsleur found that pitch discrimination is a factor in predicting success in a foreign language. The Chinese Pitch Test and the Sound-Symbol test may be used to measure the student's auditory ability (70, p. 37).

According to Pimsleur's investigation, there does exist a "talent" for learning foreign languages. He says that there is a special factor beyond intelligence which accounts for how well an individual succeeds in a language course. This special factor is auditory ability--the ability to receive and process information through the ear (70, p. 60). This factor was suggested also by Angiolillo

who experimented with teaching French to girls who had intelligence quotients of forty to seventy-five at a school for the mentally deficient (3, p. 266). Dexter found that comparatively low IQ accompanied by good pitch discrimination seems to result in successful work in French (69, p. 163).

It appears that since the use of the language laboratories, a fresh approach to the assessment of student's potentials for foreign language learning is now being investigated. "The measurement of listening comprehension or 'auding' is a relatively new development in achievement testing. The ability to understand, interpret, and critically evaluate what one hears is coming to be considered as an important educational goal." (2, p. 452).

Literature On The Use Of Grade Point Average In Predicting Success In Learning A Foreign Language

Grade point average has proved to be a good predictor of foreign language grades. Pimsleur, Sundland and McIntyre in discussing grade point average in a recent publication quoted Morrison and von Wittich as follows: "studies have consistently shown it to be superior to such other measures as IQ, Stanford Achievement Test scores, and English grades, as a predictor of foreign language achievement" (70, p. 7). Their study was based on 850 first year French and Spanish

high school and junior high school students. In this report the authors stated, "Typically, it is found that IQ correlates with foreign language achievement to the extent of about .40 while grade-point average correlates about .60 to .70" (70, p. 7).

Kauflers, Michel, Spoerl, and Salomon pointed out in their separate investigations that intelligence is a factor in language learning, but other factors, such as grade point average are more significant predictors of success. They inferred that language learning is not altogether an isolated type of learning, which is indicated by the fact that there is a very close relationship between a student's grade in a foreign language and his grade point average (45, p. 596), (66, p. 275), (80, p. 43), (75, p. 302).

Spoerl found a correlation of .809 and .830 for women and men respectively between grade point average and a semester grade in German. The class included thirty-eight students (80, p. 431). Michel conducted research on 132 high school students and 101 college students in beginning German classes. She believed that "average marks in the upper grades of the elementary schools correlate more closely with foreign language marks than do intelligence quotients." She also found that similarly the high school grade average is a better predictor of college foreign language grades than are either intelligence test results or

marks in the same foreign language in the high school period (66, p. 275).

PURPOSE OF THE STUDY

About one million tests per school day are being used in American schools (10, p. 3). In the Manhattan, Kansas High School, the results of three particular tests are available for practically all of the students. These tests are the Differential Aptitude Tests, the Brown-Carlsen Listening Comprehension Test, and the Iowa Silent Reading Test. All of these three tests are sold by reputable publishers and have been in use long enough that norms, validity, and reliability have been established.

The purpose of the study was to determine how results of the three tests mentioned above and grade point average could be used, individually or in combination, to predict the grade a student would receive if he were to take a first course in a foreign language.

Permission to copy test results, grade point averages, and course grades from the records in the Manhattan High School was obtained from the school administrators. These data were used in several simple-correlation and multiple-correlation analyses and prediction tables were made from the data.

DESCRIPTION OF TESTS

The Differential Aptitude Tests

The Differential Aptitude Test is an integrated battery of aptitude tests based on the research findings that "intelligence" is not a single ability, but rather a number of abilities possessed in varying amounts by each individual. The battery includes eight tests. The index score is determined from two of these tests. The index score was the only score used in the statistical analyses for this report. This score is obtained by summing the Verbal Reasoning and Numerical Ability scores.

What the Verbal Reasoning and Numerical Ability Tests Measure. The general scholastic aptitude measured by this test refers to ability to learn from books and lectures, and thus to master school subjects. Also this test indicates the potential of an individual for jobs of more than ordinary responsibility. The index score is the equivalent in meaning of "mental ability" scores on most traditional group tests of "intelligence" (7, p. 20). One of the component parts of this index, verbal reasoning, measures the ability to grasp and use relationships among concepts stated in words. The other component, numerical ability, measures the individual's ability to reason with numbers and to deal intelligently with quantitative materials and

ideas (7, p. 6).

Uses for the index score. The scores of this test provide information useful to the guidance counselor, the curriculum specialist, and the administrator. The index score may be used by the high school counselor to predict how the individual can be expected to develop in school and on a job. He can use the test information to guide the student into a desirable course of study, and to provide the student with a basis for realistically thinking about himself. Furthermore, the test score gives the student a way of comparing his present abilities with those of his peers.

As an index of overall scholastic ability, the tests are used to predict academic achievement and performance on college entrance examinations (7, p. 20). At present the test is being used by high school counselors and teachers to encourage or discourage a student from enrolling in certain subject fields. This may in turn effect the future vocational opportunities of the student.

The score is not only useful to the guidance counselor in his relationship with the individual student, but also provides a reference for curriculum planning; a summary measurement of scholastic ability of the students may aid the curriculum specialist in deciding what level courses

should be offered by the school, and who should take them.

The administrator can use the index score in relation to discipline--scholastic or behavioral. The Differential Aptitude Manual pointed out that sound clinical decisions can be reached by considering the student's potentials or limitations in addition to other factors (7, p. 10).

Evaluation of the Differential Aptitude Tests. The norms published in the Differential Aptitude Test Manual were based on over 47,000 pupils in grades eight through twelve from communities throughout the country (7, p. 4). The Differential Aptitude Test is probably one of the few tests on which the data are so voluminous that they have had to be deposited in the American Documentation Institute (18, p. 672).

Super, in his review of multifactor guidance tests considered only two of the currently available batteries "ready for use in counseling": the Differential Aptitude Tests and the United States Employment Service's General Aptitude Test Battery (82, p. 229). Carroll agrees with Super and adds:

> At the present time...considering the tests themselves and all the supporting data, the DAT constitutes the best available foundation battery for measuring the chief intellectual abilities and learning skills which one needs to take into account of in high school counseling (18, p. 673).

In his review of the Differential Aptitude Test battery

Carroll said that the test is the product of careful scientific research in test construction, norming, and validation. Furthermore, the manual is a model of organization, comprehensiveness and clarity which meets high standards of technical excellence (18, p. 672).

Anastasi in appraising the test pointed out that "data are presented to show that the sum of the Verbal Reasoning and Numerical Ability scores yield coefficients of .70 to .86 with subsequent academic criteria. The combination of these two scores functions as an especially valid 'intelligence test'" (2, p. 350).

Two rather insignificant criticisms of this test appear to be related to the test construction and the test score interpretation. The authors were more interested in obtaining a valid test than they were in obtaining a test of "pure" factors of ability, a fact stressed by Frederiksen (32, p. 673). Also, the test authors recommended a clinical rather than a statistical interpretation of scores and no multiple correlation results were given in the manual (18, p. 673), (32, p. 673).

The Iowa Silent Reading Test

The Iowa Silent Reading Test measures a wide range of skills indispensable to effective reading. The Importance of the ability to read as a limiting factor in school

achievement makes advisable the use of this test as a reliable and accurate device for the measurement of desired abilities in silent reading and the identification of weaknesses in reading (76, p. 3).

What the test measures. The Iowa Silent Reading Test measures the proficiency of students in high school and junior college in silent reading of the work-study type (35, p. 1). The test measures four aspects of reading: rate, comprehension, word meaning and ability to locate information. Separate scores are given on the following components of the reading test: Rate, Comprehension, Directed Reading, Word Meaning, Paragraph Comprehension, Sentence Meaning, Alphabetizing, and Use of Index (35, p. 2).

Uses of the test. The test can be used to diagnose the student's weaknesses and strengths by analyzing the parts of the score. The individual student's reading ability may be compared with national norms to give him a realistic view of his particular situation. Also, the test provides information for the instructor regarding the exact level of development of a particular class in a number of important elements of silent reading ability (2, p. 462).

Evaluation of the test. Anastasi pointed out that the Iowa Silent Reading Test is an example of a relatively

short and widely used group test. This test is a diagnostic test designed to analyze the student's performance and to provide information about the causes of difficulty.

The test was standardized on a population of over 10,000 high school students and college freshmen, and then checked against an additional population of over 18,000 (35, p. 13). The population was distributed over seventeen communities in eleven states. The communities were chosen at each grade level to yield an average of 100 IQ on the Terman-McNemar Test of Mental Ability (35, p. 6).

The Brown-Carlsen Listening Comprehension Test

The Brown-Carlsen Listening Comprehension Test was first published in 1953. The test measures listening comprehension and has been used extensively to test large groups. According to Lorge, "this test is the first, or very nearly the first of the tests to evaluate the comprehension of the spoken word" (56, p. 577).

What the test measures. This test attempts to measure listening ability. It measures the ability of the students to comprehend the spoken language. It is designed for use in grades nine through thirteen. The following skills are scored: Following Oral Directions, Recognizing Transition Words and Phrases, Recognizing Word Meanings from the Context, Immediate Recall, and Lecture Comprehension.

The Immediate Recall score measures the student's ability to keep a sequence of details in mind until a question is asked that requires thinking back over the sequence. Lecture Comprehension score measures the ability to listen for details, get the central idea, draw inference, understand organization, and note the degree of relevancy in a brief lecture presentation. This test also measures individual differences in listening ability (17, p. 2).

Uses of the test. The Brown-Carlsen Test may be used to diagnose a student's scholastic difficulties, to measure his improvement in listening skills, or to evaluate instructional procedures. The summary of the test scores of a class may indicate to the teacher the need of a group to develop listening skills.

Scores on the listening test may be compared with scores on a reading test to ascertain whether the student needs help particularly in one of these skills (17, p. 19).

Evaluation of the test. The test was administered for standardization purposes to approximately 8,000 students in twenty-five high schools from sixteen states and to three hundred college freshmen (17, p. 3). However, this test was rather harshly criticized by E. F. Lindquist and by Irving Lorge. They say that the test manual fails to provide satisfactory evidence of the validity of the test,

either in the form of a carefully developed rationale or of experimental data proving that the test measures anything not measured by a silent reading test. Auxiliary evidence on the relationship between the difference in reading scores, listening scores, and intellectual level is lacking (55, p. 577). Furthermore, these critics suggested that the manual should be revised by excluding from it the correlations that were collected in the early development phases and by including data from the more substantial standardization suggested in the Expectancy Chart given in the manual (56, p. 578).

There are some disadvantages to administering the test. Because the test must be read to the student, variation from reader to reader affect the reliability of the results, and also the dependability of the norms (56, p. 577). On the other hand, Johnson and Frandsen contended that incorrect timing as a source of error can be eliminated by pre-recording the test on standard audio-tape. They used audio-tape to test the listening comprehension of two thousand four hundred freshmen at the Ohio State University during the 1961-1962 academic year and reported that the scores obtained by the Ohio State University freshmen compared favorably with those of the college freshmen used to establish the test norms (40, p. 45).

The editor of Educational Research Bulletin

complained that the Brown-Carlsen Test has not been sufficiently studied to discover its value as "part of a predictive battery of scholastic success." However, in general, the area of listening comprehension has not received very much consideration in attempts to predict achievement (29, p. 84).

STATISTICAL INVESTIGATION

The Data

The following data were copied from the records in the Manhattan High School for all students of the graduating classes of 1963, 1964, and 1965 who had completed a first course in a foreign language:

Test score from the Differential Aptitude Test
Test score from the Iowa Silent Reading Test
Test score from the Brown-Carlsen Listening Comprehension Test
Course grade in a first course in a foreign language
Cumulative grade point average.

Test scores from the Differential Aptitude Test were those from the Index of Scholastic Aptitude which is the sum of the Verbal Reasoning and the Numerical Ability test scores. Test scores from the Iowa Silent Reading Test and from the Brown-Carlsen Listening Comprehension Test were from all of

the parts of those tests. In addition to these items, course grades in history for the class of 1964 were also obtained.

The division of students by class and by language is shown in the following table:

TABLE II

STUDENTS TAKING A FIRST COURSE IN A FOREIGN LANGUAGE IN THE MANHATTAN HIGH SCHOOL

	Class of 1963	Class of 1964	Class of 1965	Total
Spanish	29	40	58	127
French	10	20	21	51
Latin	25	26	17	68
Total	64	86	96	246

The numbers of students enrolled in the classes of 1963, 1964, and 1965 were 181, 287, and 323 with a total of 791 for the three classes. Slightly less than one third of the high school students in the three classes took a first course in a foreign language.

Test scores from the three tests were in percentiles. Course grades were in letter form, A, B, C, D, and F, which were coded numerically, 4, 3, 2, 1, and 0 for use in the statistical analyses. Cumulative grade point averages were the arithmetical mean of all high school grades for the

student where the original letter grades A, B, C, D, and F had been coded as 4, 3, 2, 1, and 0.

Statistical Analyses

First, the data were divided by language and by graduating class to form nine parts.

For the data of each part ten simple correlations and two multiple correlations were determined. The variables were: grade in foreign language, test score from Differential Aptitude Test, test score from Iowa Silent Reading Test, test score from Brown-Carlsen Listening Comprehension Test, and cumulative grade point average. Correlation of each of the five variables with all other variables gave ten simple correlations. Multiple correlations were determined using grade in foreign language as the dependent variable and other variables as independent variables. One of the multiple correlations included all five of the variables and the other multiple correlation had cumulative grade point average omitted.

The multiple correlation gave all of the factors for estimating equations, developed by the method of least squares:

$$X_{c\ 1.2345} = a_{1.2345} + b_{12.345} X_2 + b_{13.245} X_3 + b_{14.235} X_4 + b_{15.234} X_5$$

where

$X_{c\ 1.2345}$ is a computed value of the dependent variable.

X_2, X_3, X_4 and X_5 are observed values of the independent variables.

$a_{1.2345}$ is the value of $X_{c\,1.2345}$ when $X_2 = 0$, $X_3 = 0$, $X_4 = 0$ and $X_5 = 0$.

$b_{12.345}$, $b_{13.245}$, $b_{14.235}$, and $b_{15.234}$ are coefficients of X_2, X_3, X_4, and X_5. (26, p. 175).

However, when the computations were completed it was apparent that many of the coefficients of multiple determination were not significant. One of the multiple correlations had only ten sets of observations. It appeared that the data had been divided into too many parts.

Second, the data were divided by language to form three parts.

Four simple correlations and two multiple correlations were determined for each language. Ten simple correlations and two multiple correlations were determined for all languages together.

Coefficients of simple correlation are given in Tables III, IV, V, and VI.

It may be observed, in Table III, that the simple coefficient of correlation, r, for Differential Aptitude Test results and grade in a course in Spanish is 0.49. The simple coefficient of determination, r^2, is 0.24. The word simple means that there are only two variables. Either of the variables may be considered to be the independent

variable and the other variable would be the dependent variable. Considering grade in Spanish to be the dependent variable, we could say that the Differential Aptitude Test Results explains r^2 per cent, 24 per cent, of the variation in grade in Spanish. It follows that $(1 - r^2)$ per cent, 76 per cent, of the variation in grade in Spanish is not explained by Differential Aptitude Test results.

TABLE III

COEFFICIENTS OF CORRELATION AND COEFFICIENTS OF DETERMINATION FOR STUDENTS TAKING SPANISH

Variables	r	r^2
Differential Aptitude and Language Grade	.49	.24
Iowa Silent Reading and Language Grade	.37	.14
Brown-Carlsen and Language Grade	.48	.23
Grade Point Average and Language Grade	.67	.45

TABLE IV

COEFFICIENTS OF CORRELATION AND COEFFICIENTS OF DETERMINATION FOR STUDENTS TAKING FRENCH

Variables	r	r^2
Differential Aptitude and Language Grade	.59	.35
Iowa Silent Reading and Language Grade	.46	.21
Brown-Carlsen and Language Grade	.50	.25
Grade Point Average and Language Grade	.74	.55

TABLE V

COEFFICIENTS OF CORRELATION AND COEFFICIENTS OF DETERMINATION FOR STUDENTS TAKING LATIN

Variables	r	r^2
Differential Aptitude and Language Grade	.43	.18
Iowa Silent Reading and Language Grade	.33	.11
Brown-Carlsen and Language Grade	.40	.16
Grade Point Average and Language Grade	.77	.59

TABLE VI

COEFFICIENTS OF CORRELATION AND COEFFICIENTS OF DETERMINATION FOR ALL STUDENTS TAKING FOREIGN LANGUAGE

Variables	r	r^2
Differential Aptitude and Language Grade	.49	.24
Iowa Silent Reading and Language Grade	.38	.14
Brown-Carlsen and Language Grade	.46	.21
Grade Point Average and Language Grade	.71	.50
Differential Aptitude and Iowa Silent Reading	.58	.33
Differential Aptitude and Brown-Carlsen	.68	.46
Differential Aptitude and Grade Pt. Av.	.60	.36
Iowa Silent Reading and Brown-Carlsen	.52	.27
Iowa Silent Reading and Grade Pt. Av.	.50	.25
Brown-Carlsen and Grade Pt. Av.	.61	.37

It is easily observed that correlation between language grade and grade point average is higher than that between language grade and any other independent variable in each of the tables.

Results of the multiple correlation determinations are given in Tables VII to XIV inclusive.

It may be observed, in Table VII, that the coefficient of multiple correlation, R, for grade point average and grade in Spanish is 0.666. The coefficient of multiple determination, R^2, is 0.444. This means that grade point average explains 44.4 per cent of the variation in grade in Spanish.

In the second row of the table the R^2 for Differential Aptitude Test is 0.462. This means that Differential Aptitude Test with grade point average explains 46.2 per cent of the variation in grade in Spanish. It appears that the use of Differential Aptitude Test in addition to grade point average explained 1.8 per cent of the variation in grade in Spanish.

Observing the fourth row of Table VII, R^2 for Brown-Carlsen Test is 0.467. This means that all four of the dependent variables explain 46.7 per cent of the variation in grade in Spanish. It appears that the three independent variables after grade point average explain only 2.3 per cent of the variation in grade in Spanish.

Values of F are given in the fourth column. The first F-value is used to determine whether the coefficient of correlation of the first independent variable with the dependent variable is significantly greater than zero. The

following F-values are given so that it may be determined whether the additional explained variation attributable to an added independent variable is significant. The degrees of freedom to be used with the F-values are given in the fifth column. The sixth column gives the significance of the F-value. In Table VII for Differential Aptitude Test the value in the last column is 0.05. As a matter of fact, the additional explained variation of 1.8 per cent attributable to the addition of the independent variable Differential Aptitude Test may be due to chance variations in the data when actually the additional variable contributes nothing to the explained variation. However, the probability of this situation is only five in one hundred. When the F-values indicate that the probability is as great as 10 per cent that the added variable actually contributes nothing to the explained variation but is in fact due only to chance variations in the data, the letters n.s. appear in the sixth column.

TABLE VII

MULTIPLE CORRELATION--GRADE IN SPANISH AS THE DEPENDENT VARIABLE

Variable	Multiple R	R-Squared	F	D.F.	Significance
G.P.A.*	.666	.444	99.93	1, 125	.001
D.A.T.	.680	.462	4.19	1, 124	.05
I.S.R.	.682	.466	.80	1, 123	n.s.
B-C.	.683	.467	.15	1, 122	n.s.

*For explanation of abbreviations see Table VI.

TABLE VIII

MULTIPLE CORRELATION--GRADE IN SPANISH AS THE DEPENDENT VARIABLE--GRADE POINT AVERAGE NOT INCLUDED

Variable	Multiple R	R-Squared	F	D.F.	Significance
D.A.T.	.489	.239	39.35	1, 125	.001
I.S.R.	.498	.247	1.33	1, 124	n.s.
B-C.	.539	.290	7.40	1, 123	.01

TABLE IX

MULTIPLE CORRELATION--GRADE IN FRENCH AS THE DEPENDENT VARIABLE

Variable	Multiple R	R-Squared	F	D.F.	Significance
G.P.A.	.743	.552	60.58	1, 49	.001
D.A.T.	.756	.571	2.05	1, 48	n.s.
I.S.R.	.757	.572	.17	1, 47	n.s.
B-C.	.757	.573	.03	1, 46	n.s.

TABLE X

MULTIPLE CORRELATION--GRADE IN FRENCH AS THE DEPENDENT VARIABLE--GRADE POINT AVERAGE NOT INCLUDED

Variable	Multiple R	R-Squared	F	D.F.	Significance
D.A.T.	.587	.344	25.76	1, 49	.001
I.S.R.	.606	.368	1.76	1, 48	n.s.
B-C.	.610	.372	.37	1, 47	n.s.

TABLE XI

MULTIPLE CORRELATION--GRADE IN LATIN AS THE DEPENDENT VARIABLE

Variable	Multiple R	R-Squared	F	D.F.	Significance
G.P.A.	.773	.598	98.21	1, 66	.001
D.A.T.	.776	.602	.72	1, 65	n.s.
I.S.R.	.778	.606	.55	1, 64	n.s.
B-C.	.785	.617	1.81	1, 63	n.s.

TABLE XII

MULTIPLE CORRELATION--GRADE IN LATIN AS THE DEPENDENT VARIABLE--GRADE POINT AVERAGE NOT INCLUDED

Variable	Multiple R	R-Squared	F	D.F.	Significance
D.A.T.	.436	.190	15.47	1, 66	.001
I.S.R.	.452	.205	1.20	1, 65	n.s.
B-C.	.466	.217	1.01	1, 64	n.s.

TABLE XIII

MULTIPLE CORRELATION--GRADE IN ANY FOREIGN LANGUAGE AS THE DEPENDENT VARIABLE

Variable	Multiple R	R-Squared	F	D.F.	Significance
G.P.A.	.709	.503	247.32	1, 244	.001
D.A.T.	.714	.510	3.33	1, 243	.10
I.S.R.	.714	.510	.06	1, 242	n.s.
B-C.	.714	.510	.05	1, 241	n.s.

TABLE XIV

MULTIPLE CORRELATION--GRADE IN ANY FOREIGN LANGUAGE AS THE DEPENDENT VARIABLE--GRADE POINT AVERAGE NOT INCLUDED

Variable	Multiple R	R-Squared	F	D.F.	Significance
D.A.T.	.493	.243	78.36	1, 244	.001
I.S.R.	.505	.255	4.15	1, 243	.05
B-C.	.527	.277	7.34	1, 242	.01

After examining the values of R-squared in each of the tables it was obvious that formulation of prediction equations would be impractical. R-squared is the per cent of the variation in the dependent variable that could be explained by using the independent variables. The tables show values of R-squared when one, two, three or four of the independent variables are considered. Clearly, in all instances, the small increase in variation of the dependent variable explained by using any of the independent variables after the first does not warrant the use of prediction equations. Furthermore, it appears that grade point average is a better predictor of grade in a foreign language than is any of the three tests used and when grade point average is used the use of test results would be impracticable.

Third, it having been observed that slightly less than one third of the high school students take a course in foreign language, there was the question of whether the results of the above described investigations reflected peculiarities of that minority group. Since all high school students take a course in history it appeared that analyses similar to those described above using grade in history as the dependent variable would be of interest. Data for one hundred eighty students of the class of 1963 were used in these analyses. Coefficients of simple correlation are given in Table XV.

TABLE XV

COEFFICIENTS OF CORRELATION FOR STUDENTS TAKING HISTORY

Variables	r	r^2
Differential Aptitude and History Grade	.59	.35
Iowa Silent Reading and History Grade	.54	.29
Brown-Carlsen and History Grade	.64	.41
Grade Point Average and History Grade	.84	.71

It is easily observed that correlation between history grade and grade point average is higher than that between history grade and any other independent variable.

Results of multiple correlation determinations are given in Tables XVI and XVII.

Observation of values of coefficients of correlation and of R-squared in these tables leads to conclusions identical to those drawn from the correlation analyses for foreign language students. Furthermore, it appears that grade point average will account for about 50 per cent of the variability in foreign language grades and it will account for about 70 per cent of the variability in history grades.

TABLE XVI

MULTIPLE CORRELATION--GRADE IN HISTORY AS THE DEPENDENT VARIABLE

Variable	Multiple R	R-Squared	F	D.F.	Significance
G.P.A.	.835	.697	410.95	1, 178	.001
D.A.T.	.835	.697	.00	1, 177	n.s.
I.S.R.	.835	.697	.06	1, 176	n.s.
B-C.	.836	.698	.55	1, 175	n.s.

TABLE XVII

MULTIPLE CORRELATION--GRADE IN HISTORY AS THE DEPENDENT VARIABLE--GRADE POINT AVERAGE NOT INCLUDED

Variable	Multiple R	R-Squared	F	D.F.	Significance
D.A.T.	.587	.345	93.85	1, 178	.001
I.S.R.	.619	.383	11.07	1, 177	.001
B-C.	.662	.437	16.93	1, 176	.001

Fourth, it is suggested that prediction tables using grade point average be used to predict grade in a first course in foreign language. Having prediction tables, the counselor can predict the student's grade in a first course in foreign language on the basis of past experiences of other students, using only cumulative grade point average as the independent variable. Four prediction tables for language courses and one prediction table for history using the data described above are given in Tables XVIII to XXII inclusive.

TABLE XVIII

EXPECTANCY TABLE SHOWING RELATIONSHIP BETWEEN GRADE POINT AVERAGE AND GRADE IN SPANISH

Cumulative grade point average	Number	Per cent and number (in parenthesis) receiving each grade				
		F	D	C	B	A
3.001 to 4.000	51		4% (2)	25% (13)	37% (19)	33% (17)
2.501 to 3.000	31		29% (9)	42% (13)	26% (8)	3% (1)
2.001 to 2.500	29		45% (13)	38% (11)	14% (4)	3% (1)
0.000 to 2.000	16		69% (11)	25% (4)		6% (1)

TABLE XIX

EXPECTANCY TABLE SHOWING RELATIONSHIP BETWEEN GRADE POINT AVERAGE AND GRADE IN FRENCH

Cumulative grade point average	Number	Per cent and number (in parenthesis) receiving each grade				
		F	D	C	B	A
3.001 to 4.000	23			26% (6)	48% (11)	26% (6)
2.501 to 3.000	17		6% (1)	65% (11)	29% (5)	
2.001 to 2.500	8		37% (3)	62% (5)		
0.000 to 2.000	3	33% (1)		33% (1)	33% (1)	

TABLE XX

EXPECTANCY TABLE SHOWING RELATIONSHIP BETWEEN GRADE POINT AVERAGE AND GRADE IN LATIN

Cumulative grade point average	Number	Per cent and number (in parenthesis) receiving each grade				
		F	D	C	B	A
3.001 to 4.000	32		6% (2)	16% (5)	41% (13)	37% (12)
2.501 to 3.000	19		21% (4)	47% (9)	26% (5)	5% (1)
2.001 to 2.500	13		54% (7)	38% (5)	8% (1)	
0.000 to 2.000	4		75% (3)	25% (1)		

TABLE XXI

EXPECTANCY TABLE SHOWING RELATIONSHIP BETWEEN GRADE POINT AVERAGE AND GRADE IN ANY FOREIGN LANGUAGE

Cumulative grade point average	Number	Per cent and number (in parenthesis) receiving each grade				
		F	D	C	B	A
3.001 to 4.000	106		4% (4)	23% (24)	41% (43)	33% (35)
2.501 to 3.000	67		21% (14)	49% (33)	27% (18)	3% (2)
2.001 to 2.500	50		46% (23)	42% (21)	10% (5)	2% (1)
0.000 to 2.000	23	4% (1)	61% (14)	26% (6)	4% (1)	4% (1)

TABLE XXII

EXPECTANCY TABLE SHOWING RELATIONSHIP BETWEEN GRADE POINT AVERAGE AND HISTORY GRADE

Cumulative grade point average	Number	Per cent and number (in parenthesis) receiving each grade				
		F	D	C	B	A
3.001 to 4.000	50			2% (1)	44% (22)	54% (27)
2.501 to 3.000	46		13% (6)	35% (16)	43% (20)	9% (4)
2.000 to 2.500	40		42% (17)	42% (17)	15% (6)	
0.000 to 2.000	44	20% (9)	68% (30)	9% (4)	2% (1)	

SUMMARY

The purpose of the study was to determine how the Scholastic Index of the Differential Aptitude Test, scores on the Iowa Silent Reading Test and Brown-Carlsen Listening Comprehension Test, and the cumulative grade point average could be used individually or in combination, to predict the grade a student would receive if he were to take a first course in a foreign language.

Results of the tests mentioned above with grade point average were copied from the records in the Manhattan, Kansas High School for students of the graduating classes of 1963, 1964, and 1965 who took a first course in French, Latin, or Spanish. Simple correlation and multiple correlation analyses were made using this data.

It was determined that cumulative grade point average was a better predictor of grade in a first course in foreign language than was the result of any one of the three tests used. It was furthermore determined that the use of tests results with grade point average in any combination would only slightly increase the accounted for variability in foreign language course grades. It was concluded that cumulative grade point average alone should be used to predict the grade in a first course in a foreign language. Prediction tables are included.

BIBLIOGRAPHY

BIBLIOGRAPHY

1. Allen, Edward D. "Effects of Language Laboratory on the Development of Skill in a Foreign Language," Modern Language Journal, 44:355-58, December, 1960.

2. Anastasi, Anne. Psychological Testing. New York: The MacMillan Company, 1961.

3. Angiolillo, Paul F. "French For Feebleminded," Modern Language Journal, 26:266-71, April, 1942.

4. Ayer, G. W. "Auditory Discrimination Test Based on Spanish," Modern Language Journal, 44:227-30, May, 1960.

5. Baer, M. F. "Two Studies on Testing," Personnel and Guidance Journal, 40:672-3, April, 1962.

6. Banathy, Bela, James W. Popam, and Wayne E. Rosenoff. "The Common Concepts Foreign Language Test-Rationale and Description," The Modern Language Journal, 46:363-65, December, 1962.

7. Bennett, George K., Harold G. Seashore, and Alexander G. Wesman. Differential Aptitude Tests Manual, Third Edition. New York: The Psychological Corporation, 1959.

8. Betts, Emmett A. "Phonic: Practical Considerations Based on Research," Elementary English, 33:357-71, October, 1956.

9. Bingham, Walter Van Dyke. Aptitudes and Aptitude Testing. New York and London: Harper and Brothers Publishers, 1937.

10. Birkmaier, Emma M. "Modern Languages," Encyclopedia of Educational Research, New York: The MacMillan Company, 1960.

11. _____. "Foreign Languages," Review of Educational Research, 28:127-39, April, 1958.

12. Blade, Gary, and James Steffenson. "Testing: Tool for Curriculum Development," Overview Magazine, November, 1961.

13. Bottke, K. G. "Test of Aural and Oral Aptitude For Foreign Language Study," Modern Language Journal, 29:709-9, 1948.

14. Bratnober, H. L. "Launching a Language Laboratory and Its Program," High School Journal, 44:79-84, November, 1960.

15. Brown, Frederick G., and Thomas E. Dubois. "Correlates of Academic Success for High-Ability Freshman Men," The Personnel and Guidance Journal, 42:603-7, February, 1964.

16. Brown, James I. "Why Not Teach Listening?" School and Society, 69:113-16, February, 1949.

17. _____, and Robert G. Carlsen. Brown-Carlsen Listening Comprehension Test Manual of Directions. New York: Harcourt, Brace and World, Inc., 1955.

18. Carroll, John B. "Differential Aptitude Test," The Fifth Mental Measurements Yearbook. Oscar Krisen Buros, Editor, Highland Park, New Jersey: The Gryphon Press, 1959.

19. _____. "A Factor Analysis of Two Foreign Language Aptitude Batteries," The Journal of General Psychology, 59:3-19, July, 1958.

20. _____. "Communication Theory, Linguistics and Psycholinguistics," Review of Educational Research, 28:89-95, April, 1958.

21. _____. The Study of Language. Cambridge, Massachusetts: Harvard University Press, 1953.

22. Cioffari, Vincenzo. "What Can We Expect From the Language Laboratory?" Modern Language Journal, 45:3-9, January, 1961.

23. Clark, Robert. "The Intelligence Quotient," Test Service Bulletin, No. 77. Harcourt, Brace and World, Inc., pp. 1-3.

24. Cook, David R., and William D. Martinson. "The Relationship of Certain Course Work in High School to Achievement in College," Personnel and Guidance Journal, 40:703-707, 1962.

25. Cox, F. N. "The Prediction of Success and Failure in Learning Foreign Languages," Australian Journal of Psychology, 7:56-65, 1955.

26. Croxton, Frederick E. Elementary Statistics. New York: Dover Publications, Inc., 1953.

27. Dickens, Milton. "Studies in Listenability," Speech Monographs, 22:19-59, March, 1955.

28. Dunkel, Harold B., and Roger A. Pillet. "The French Program in the University of Chicago Elementary School," Elementary School Journal, 57:17-27, October, 1956.

29. Eckelberry, R. H., Editor. "Brown-Carlsen Listening Comprehension Test," Educational Research Bulletin, 34:83-4, March, 1955.

30. Eels, Kenneth. "How Effective Is Differential Prediction in Three Types of College Curricula?" Educational and Psychological Measurements, 21: 455-71, 1961.

31. Feder, Daniel D., John L. Ferguson, Ruth Horner, and Robert J. Norwine. "Multiple Testing: Hindrance or Help? A Symposium," Journal of the National Association of Women Deans and Counselors, 25: 34-35, October, 1961.

32. Frederiksen, Norman. The Fifth Mental Measurements Yearbook, Oscar Krisen Buros, Editor, Highland Park, New Jersey: The Gryphon Press, 1959.

33. Goldman, Leo. Using Tests in Counseling. New York: Appleton-Century-Crofts, Inc., 1961.

34. Good, Warren R. "Misconceptions About Intelligence Testing," The University of Michigan School of Education Bulletin, May, 1954.

35. Greene, H. A., A. N. Jorgensen, and V. H. Kelley. Iowa Silent Reading Tests New Edition, Advanced Test: Manual of Directions. New York: Harcourt, Brace and World, Inc., 1943.

36. Guilford, J. P., Benjamin Fruchter, and Paul H. Kelley. "Development and Applications of Tests of Intellectual and Special Aptitudes," Review of Educational Research, 29:26-41, February, 1959.

37. Guiliano, W. "Aural-Oral Proficiency Without Laboratories," Modern Language Journal, 45:171-3, April, 1961.

38. Hascall, Edward O. "Predicting Success in High School Foreign Language Study," Personnel and Guidance Journal, 40:361-67, December, 1961.

39. Jacobs, James N. "Aptitude and Achievement Measures in Predicting High School Academic Success," The Personnel and Guidance Journal, 37:334-41, January, 1959.

40. Johnson, Craig F., and Kenneth Frandsen. "Administering the Brown-Carlsen Listening Comprehension Test," The Journal of Communication, 13:38-45, March, 1963.

41. Jones, Robert A., and William B. Michael. "The Validity of a Battery of Tests in Communication Skills for Foreign Students Attending an American University," Educational and Psychological Measurements, 21:493-496, 1961.

42. Jordan, J. N. "Prognosis in Foreign Languages in Secondary Schools," School Review, 33:541-46, September, 1925.

43. Joseph, Sister Marie. "Teaching Foreign Vocabulary by Seeing, Hearing, Saying," Catholic School Journal, 59:26-7, November, 1959.

44. Kaczkowski, H. R. "Using Expectancy Tables to Validate Test Procedures in High School," Educational and Psychological Measurements, 19:675-7, Winter, 1959.

45. Kaulfers, Walter Vincent. "Present Status of Prognosis in Foreign Language," School Review, 39: 585-96, October, 1931.

46. _____. "Effect of the IQ on the Grades of One Thousand Students of Foreign Languages," School and Society, 30:163-164, July, 1929.

47. _____. "The Intelligence Factor in Foreign Language Achievement," The School Review, 39:42-48, January, 1931.

48. _____. "Foreign Languages," Review of Educational Research, 25:154-166, April, 1955.

49. _____. "Prognostic Value of General Language," School and Society, 28:662-4, November, 1928.

50. Kramar, Edward J. J. "The Relationships of the Wechsler-Belleview and American College Examination With Brown-Carlsen Listening Comprehension Test," Doctor's Thesis, Tallahassee, Florida, State University, Abstract: Dissertation Abstracts 15:2599, No. 12, 1955.

51. Lado, Robert. Language Testing. New York: Longmans, 1961.

52. Layton, Wilbur L., and Edward O. Swanson. "Relationship of Ninth Grade Differential Aptitude Test Scores to Eleventh Grade Test Scored and High School Rank," The Journal of Educational Psychology, 49:153-56, June, 1958.

53. Lewis, Nettie B. "Listen Please!" The Clearing House, 30:335-36, May, 1956.

54. Lewis, Thomas R. "Listening," Review of Educational Research," 28:89-95, April, 1958.

55. Lindquist, H. F. "Listening Comprehension," The Fifth Mental Measurements Yearbook, Oscar Krisen Buros, Editor, Highland Park, New Jersey: The Gryphon Press, 1959.

56. Lorge, Irving. "Listening Comprehension," The Fifth Mental Measurements Yearbook, Oscar Krisen Buros, Editor, Highland Park, New Jersey: The Gryphon Press, 1959.

57. Lyman, Howard B. Test Scores and What They Mean. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963.

58. MacDonald, Douglas R. "The Construction and Evaluation of Objective Tests of Oral Language Skills," Doctor's Thesis, Boston: Boston University School of Education, Abstract: Dissertation Abstracts, 17:1961-62, No. 9, 1957.

59. Manuel, Herschel T. "The Use of Parallel Tests in the Study of Foreign Language Teaching," Educational and Psychological Measurements, 13:431-36, Autumn, 1953.

60. Martz, D. "Latin in a Changing Curriculum," School and Community, 46:25-5, January, 1960.

61. McCabe, George E. "Test Interpretation in the High School Guidance Program," Personnel and Guidance Journal, 35:449-451, 1957.

62. McCullough, Constance M. "Reading," Review of Educational Research, 28:96-106, April, 1958.

63. Merenda, Peter F., Charles E. Hall, Walter V. Clarke, and Alfred C. Pascale. "Relative Predictive Efficiency of the DAT and a Short Multifactor Battery of Tests," Psychological Report, 11:71-81, 1962.

64. Merwin, Jack C. and Eric F. Gardner. "Development and Application of Tests of Educational Achievement," Review of Educational Research, 32:40-50, 1962.

65. Michael, William B., Robert A. Jones, Anna Cox, Arthur Gershon, Marvin Hoover, Kenneth Katz, and Dennis Smith. "High School Record and College Board Scores as Predictors of Success in a Liberal Arts Program During The Freshman Year of College," Educational and Psychological Measurements, 22: 399-400, Summer, 1962.

66. Michel, Sister Virgil. "Prognosis in German," Modern Language Journal, 20:275-287, February, 1936.

67. Milholland, John E., and Benno G. Fricke. "Development and Application of Tests of Special Aptitude," Review of Educational Research, 32:25-40, February, 1962.

68. Peters, H. C. "The Prediction of Success and Failure in Elementary Foreign Language Courses," Journal of Applied Psychology, 37:178-181, June, 1953.

69. Pimsleur, Paul, Ludwig Mosberg, Andrew L. Morrison. "Student Factors in Foreign Language Learning," The Modern Language Journal, 46:160-70, April, 1962.

70. _____, Donald M. Sundland, and Ruth D. McIntyre. Under Achievement in Foreign Language Learning. Columbus, Ohio: The Ohio State Research Foundation, 1963.

71. _____, Robert F. Stockwell, and Andrew L. Comrey. "Foreign Language Learning Ability," Journal of Educational Psychology, 53:15-27, February, 1962.

72. _____. "New Tests For a New Era," Audiovisual Instruction, 7:634-36, November, 1962.

73. Pritchard, D. F. L. "An Investigation Into The Relationship Between Personality Traits and Ability in Modern Foreign Languages," British Journal of Educational Psychology, 22:147-48, June, 1952.

74. Reindrop, Reginald C. "The Reading Aim Re-examined," The Modern Language Journal, 41:239-44, May, 1957.

75. Salomon, Ellen. "A Generation of Prognosis Testing," Modern Language Journal, 38:299-303, October, 1954.

76. Sanders, Merritt, Director. Catalog 1960, Standard Test Numbers. Emporia, Kansas: Bureau of Educational Measurements, 1960.

77. Seagoe, May V. "Prediction of Achievement in Foreign Languages," Journal of Applied Psychology, 22:632-40, December, 1938.

78. Skelton, Robert B. "High School Foreign Language Study and Freshman Performance," School and Society, 85:203-5, 1957.

79. Snedecor, George W., and William G. Cochran. Statistical Methods. Ames, Iowa: The Iowa State University Press, 1956.

80. Spoerl, Dorothy T. "A Study of Some of the Possible Factors Involved in Language Learning," Modern Language Journal, 23:428-431, 1939.

81. Stadel, Adolph R. "An Appraisal Technique in Foreign Language," Ohio Schools, 40:32-33, May, 1962.

82. Super, Donald E., and John O. Crites. Appraising Vocational Fitness by Means of Psychological Tests. New York: Harper Bros., 1949.

83. Traxler, Arthur E. Techniques of Guidance. New York: Harper and Brothers, 1957.

84. _____. "Relationship of Certain Predictive Measures to Achievement in First Year French and Latin," Educational Records Bulletin, 1955, No. 66:73-77, 1955.

85. Upshur, J. A. "Language Proficiency Testing and the Contrastive Analysis Dilemma," Language Learning, 12:123-27, 1962.

86. Wellman, F. E. "Differential Prediction of High School Achievement Using Single Score and Multiple Factor Tests of Mental Maturity," Personnel and Guidance Journal, 30:512-17, 1957.

87. Welsh, G. B. "An Investigation of Some Predictive Factors in Auding Ability," Speech Monographs, 22:153-54, June, 1955.

88. Wesman, Alexander G. "The Three-Legged Coefficient," Test Service Bulletin, No. 40. New York: The Psychological Corporation, 1950, pp. 20-23.

89. _____. "Aptitude, Intelligence, and Achievement," Test Service Bulletin, No. 51. New York: The Psychological Corporation, 1956, pp. 4-6.

A STUDY OF SCHOLASTIC APTITUDE, READING AND LISTENING ABILITY, AND GRADE POINT AVERAGE, AS PREDICTORS OF ACHIEVEMENT IN A FIRST COURSE IN FOREIGN LANGUAGE

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AN ABSTRACT OF A MASTER'S REPORT

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A major problem associated with learning a second language is whether or not special abilities and disabilities involved in learning a foreign language can be determined and tested so as to predict future success in this subject.

Various committees, organizations, foundations, government agencies, and educators have investigated the problems involved in the learning of a foreign language.

For forty years, investigators have tried to relate test results and achievement in foreign language courses. However, only a few of the studies have attempted to use several test results in combination to predict grades in foreign language.

Purpose of the Study

In the high school at Manhattan, Kansas the results of three particular tests are available for practically all of the students. These tests are the Differential Aptitude Tests, the Iowa Silent Reading Test, and the Brown-Carlsen Listening Comprehension Test. All of these tests are sold by reputable publishers and have been in use long enough that norms, validity, and reliability have been established.

The purpose of the study was to determine how results of the three tests mentioned above and grade-point-average could be used, individually or in combination, to

predict the grade a student would receive if he were to take a first course in a foreign language.

Procedure

The data. Permission to copy test results, grade-point-averages, and course grades from the records in the Manhattan, Kansas High School was obtained from the school administrators. The following data were copied for all students of the graduating classes of 1963, 1964, and 1965 who had completed a first course in a foreign language:

Test score from the Differential Aptitude Test
Test score from the Iowa Silent Reading Test
Test score from the Brown-Carlsen Listening Comprehension Test
Course grade in a first course in a foreign language
Cumulative grade-point-average.

In addition to the above, grades in history for the class of 1964 were obtained.

Statistical analyses. Fourteen sets of simple correlations and twenty-eight multiple correlation analyses were made using the above described data and the IBM 1410 Computer.

Summary of Findings

It was determined that cumulative grade-point-average

was a better predictor of grade in a first course in foreign language than was the scores on the Differential Aptitude Tests, the Iowa Silent Reading Test, or the Brown-Carlsen Listening Comprehension Test. It was furthermore determined that the use of test results with grade-point-average in any combination would only slightly increase the accounted for variability in foreign language course grades. Furthermore, it was determined that grade-point-average will account for about fifty per cent of the variability in foreign language grades, and that grade-point-average will account for about seventy per cent of the variability in history grades. It was concluded that cumulative grade-point-average alone should be used to predict the grade in a first course in a foreign language. Prediction tables were included.