July 23, 1937

To the Committee on Graduate Study:

I submit herewith a thesis written by Emma Ruth Ensor Tallent and entitled "An Analysis of Certain Relationships Between Intelligence Quotients, English Placement Test Scores, and Scholastic Averages of Students Enrolled in Modern Foreign Languages, 1930-1936, University of Tennessee", and recommend that it be accepted for nine quarter hours credit in partial fulfillment of the requirements for the degree of Master of Arts, with a major in French.

Walter E. Stefel

Major Professor

At the request of the Committee on Graduate Study, we have read this thesis, and recommend its acceptance.

F. F. Frantz

Gerald E. Wade

Accepted for the Committee

W. C. Lowe

Dean

AN ANALYSIS OF CERTAIN RELATIONSHIPS BETWEEN INTELLIGENCE QUOTIENTS, ENGLISH PLACEMENT TEST SCORES, AND SCHOLASTIC AVERAGES OF STUDENTS ENROLLED IN MODERN FOREIGN LANGUAGES, 1930-1936, UNIVERSITY OF TENNESSEE

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A THESIS

Submitted to the Graduate Committee
of
The University of Tennessee
in
Partial Fulfillment of the Requirements
for the degree of
Master of Arts

by

EMMA RUTH ENSOR TALLENT

August, 1937

PREFACE

The study herewith presented is not intended to be a complete analysis of all problems associated with relationships between modern foreign languages and other subjects studied at the University of Tennessee. The field is entirely too broad to be covered by one investigation. In this survey the writer has collected and analyzed data within a field necessarily restricted by the limits of her time and the resources at her disposal. Sufficient help in the collection of data was not available to make the investigation as broad as it was originally hoped it might be.

The only previous study made at the University which has any comparable results is that made by Mr. O. D. Teague[1]. His investigations were made with an entirely different object in view; namely, to discover the predictive significance of pre-college data with reference to college success, but since certain of his correlations are based on the Terman Group Test of Mental Ability and on the University of

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1. "Predictive Significance of Pre-College Data with Reference to College Success". Unpublished Master's thesis, University of Tennessee, 1931.

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Tennessee Placement Test in English, they are in part included here.

In the preparation of this thesis it has been necessary to seek assistance from many sources. It is a pleasure to acknowledge the kindness of the various professors and departments who have rendered invaluable aid. I wish to express gratitude to Mr. Walter E. Stiefel of the Romance Language Department for his suggestion of the study as a possible thesis subject and for his tireless assistance in its accomplishment. I most sincerely thank Mr. W. Harold Read of the School of Commerce for his supervision of the entire statistical portion of the work. To Mr. Broadus F. Farrar of the English Department I am indebted for the use of the English placement test grades. I feel especially grateful to Dr. R. F. Thomason, Registrar, for the use of the permanent records of the University, for providing me with a place to work, for his explanation of the records, and for his statement concerning the use of the intelligence test, and to his office assistants for their kind consideration. I am grateful to Mr. Felix M. Massey, Dean of Men, who

kindly allowed the use of various statistical data which he had assembled, to Dr. John C. Hodges of the English Department for copies of the University of Tennessee Placement Test in English, to Dr. Joseph E. Avent, Professor of Educational Psychology, for bibliographical information and for copies of the Terman Group Test of Mental Ability, to Dr. Edwin C. Kirkland of the English Department for information concerning the use of the English placement test, to the Romance and Germanic Language Departments for the use of their roll books, and to Dr. Gerald E. Wade of the Romance Language Department for his careful reading of the manuscript. I wish to recognize last of all the extensive assistance that I have received from Dr. F. F. Frantz, Professor of Romance Languages, who has assisted by reading the manuscript and caring for innumerable details.

To all these, and to the many others who have assisted me in the development of this study, I take this opportunity of expressing my obligation and my gratitude.

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CHAPTER I

DEFINITION AND SCOPE OF THE STUDY

At the outset of the project, originally undertaken in the fall of 1936, it was hoped to discover certain definite facts regarding the status of foreign languages at the University (the trend of enrollment toward each of the various languages or away from them, and from what other subjects of the curriculum students came to foreign languages or to what subjects they went from them; the total enrollment in the various languages over the years studied, etc., etc.). It was not at that time fully appreciated how much effort and time would be needed for a broad investigation which would involve a considerable number of factors. But it soon became evident that the study must be narrowed to a more modest scope, one which would reasonably be contained within the limits of a Master's thesis. It was decided, therefore, as the title of the thesis indicates, to restrict the investigation to a study and an analysis of the relationships between Intelligence Quotients, English Placement Test Scores, and Scholastic Averages of students enrolled in modern foreign languages during 1930-1936.

The analysis consists of eight correlations, their evaluation and interpretation. The correlations are for the following: (1) intelligence quotients and scholastic averages, (2) intelligence quotients and averages of modern foreign language grades, (3) intelligence quotients and averages of English grades, (4) English placement test grades and scholastic averages, (5) English placement test grades and averages of modern foreign language grades, (6) English placement test grades and averages of English grades, (7) averages of modern foreign language grades and scholastic averages, and (8) averages of modern foreign language grades and averages of English grades.

Preceding the correlations are descriptions of the collection, selection and analysis of the data. Following the correlations come conclusions which were drawn from the relationships discovered. It is felt that the conclusions may have some validity, since they are based on a fairly large number of figures, and cover a total of six academic years.

The foreign languages taken into consideration are French, Spanish, and German. Italian, having

been taught only in the year 1931-1932, failed to offer sufficient data for consideration.

CHAPTER II

COLLECTION OF DATA

As the first step in the project, a roll was made, from the grade books of the instructors of French, German, and Spanish, of the students who had pursued one or more of the three languages at some period between the fall quarter of 1930 and the spring quarter of 1936. Each name was then placed on a three by five inch card[1], and after the name were set down: (1) the date of the student's entrance to the University, (2) the college in which he enrolled, (3) the high school or college from which he came, (4) his intelligence quotient as determined by examination on his entrance, (5) his English Placement Test score, (6) his scholastic average, including modern foreign language grades, at graduation, or when he left the University[2], (7) his scholastic

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1. See Appendix A for a sample card.
2. It was found convenient to exclude from consideration all students who were yet enrolled in the fall quarter of 1936.
   In computing scholastic averages, required military science and physical education marks were not included. In the case of a transfer student, the scholastic marks earned in the college from which he came were averaged with those earned in the University of Tennessee. Only those transfers who had originally begun college work here, then had gone elsewhere and had returned, were included; those whose college work was begun in another institution were excluded from consideration, as their record cards lacked intelligence quotients and English Placement Test scores.
   See Appendix B for a sample grade sheet of the type used in computing averages.

average exclusive of foreign language grades, (8) his average for English courses, and (9) his average for modern foreign language courses.

The number of cards totaled about 4,000. But as the data on them were studied, it became plain that only a relatively small number actually contained adequate and comparable material for investigation. It was necessary to put aside all cards of those students who had attended summer school only as well as those of graduate students and those who had dropped from all language classes. Other cards were not usable because of incomplete information on one or another item needed for the study. A third group had to be discarded because either the intelligence quotients or the English Placement Test grades were not comparable. That is, the Henmon-Nelson Intelligence Test, given in 1932, offered no basis of comparison with the Terman Group Test of Mental Ability given the remainder of the years covered herein, nor could the Shepherd English test given in 1935 be compared with the departmental English test given the other years. There remained, finally, 845 cards which offered complete and comparable data.

CHAPTER III

SELECTION AND PRELIMINARY MANIPULATION OF DATA

Having selected 845 cases with complete and comparable data, it was then necessary to choose a method of statistical analysis which might best serve to show the relationship between the various items studied. As it would have demanded an inordinate amount of time to run correlations with the large total of 845 cases, a sample group was chosen at random[1] consisting of ninety-two cards. From them a correlation was calculated for the students' intelligence quotients and their University scholastic averages.

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1. Dr. J. E. Avent (The Summer Sessions in State Teachers' Colleges as a Factor in the Professional Education of Teachers, p. 164) basing his assertion on R. W. Sellars' Essentials of Logic, p. 232, asserts that the method of random selection has been stated as a "law of statistical regularity", and he quotes Sellars as follows. "A moderately large number of items taken at random from a very large group are almost sure to have characteristics of the larger group". Dr. Avent goes on to say that the truth of this "law" has been statistically demonstrated in H. C. Burdge's Our Boys (State of New York, Military Training Commission, Bureau of Vocational Training, 1921), pp. 27-29.

By the Spearman Rank Difference Method[2] it was determined that the coefficient of correlation for the intelligence quotients and the scholastic averages was .508[3]. (see Appendix C for the details of the calculation).

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2. The reader who may be unfamiliar with the technical terminology necessarily employed in this study should consult any standard volume on statistics and measurements, such as Herbert Sorenson, Statistics for Students of Psychology and Education; George R. Davis and Dale Yoder, Business Statistics, New York, 1937; or F. H. Harper, Elements of Practical Statistics, New York, 1930.
3. The Pearson Product Moment Method of Calculation was also employed. By it the coefficient of correlation was determined to be .406. As is well-known (cf. Sorenson, op. cit., p. 209) there is always a slight difference in the coefficient of correlation when calculated by the Pearson method as compared with that determined by Spearman's procedure. For all practical purposes the difference may be ignored. In the remainder of this study, only the Spearman method was employed, as it is particularly suitable for problems in which the number of paired scores is small (cf. ibid., p. 206).

As a check upon the accuracy of the first sampling, another group of ninety-two cards was chosen, again by random selection. The same correlation was calculated. The result was so different - a coefficient of correlation of .313 as compared with the first coefficient of .508 - that it was at once evident that a sampling of only ninety-two cards would not yield valid results. Visible evidence of the lack of close correspondence between the two samplings is further offered by Table I, which shows the number of students from each sampling whose intelligence quotients fell into each of the different classes indicated in column one.

TABLE I

DISTRIBUTION OF INTELLIGENCE QUOTIENTS
FOR 184 CASES

Intelligence Quotients	First Sampling 92 cases	Second Sampling 92 cases
130-134	1	0
125-129	0	0
120-124	1	5
115-119	12	9
110-114	12	20
105-109	25	17
100-104	20	19
95-99	14	8
90-94	5	10
85-89	1	2
80-84	0	2
75-79	0	0
70-74	0	0
65-69	0	0
60-64	1	0

Table I is to be read as follows. From the first sampling of ninety-two cards one student showed an intelligence quotient of between 130 and 134[4]; from the second sampling no student achieved that score. From the first sampling one student made a score between 120 and 124; from the second sampling, five students made that score. And so on down the table. The lack of close correspondence between colums two and three of Table I is obvious.

Again in Table II the lack of close correspondence between the two samplings is indicated by columns two and three.

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4. The intelligence test which gave these quotients was the "Terman Group Test of Mental Ability", published by the World Book Company, Yonkers-on-the Hudson, New York, 1927, Forms A and B. A specimen copy of Form B is appended to this thesis. The forms were given interchangeably in the University, and our correlations are based on the quotients from the two. Dr. J. E. Avent, of the Department of Education of the University, who has had much experience with the tests, asserts that the two forms are so nearly equivalent that figures resulting from the use of the one correlate very highly with figures from the other.

TABLE II

DISTRIBUTION OF SCHOLASTIC AVERAGES
FOR 184 CASES

Scholastic Averages	First Sampling 92 cases	Second Sampling 92 cases
3.0-4.0	6	8
2.0-2.9	38	31
1.0-1.9	40	38
0-0.9	8	15

Table II indicates that whereas six students of the first sampling had achieved a high scholastic average of between three and four "quality points"[5], from the second sampling eight students had attained that average. The remainder of the brief table should be clear without further comment.

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5. "Quality points" are the credit units used at the University of Tennessee as a convenient method of averaging student grades. Thus, a student who has achieved a mark in any course of A, B, C, or D (equivalent to the numerical percentages of 95-100, 85-94, 75-84, 65-74) is said to have made in that course 4, 3, 2, or 1 quality points respectively. Grades of E (a condition, equivalent numerically to less than the lowest passing mark of 65%), F (a failing mark), I (an incomplete), or X (which indicates absence from the final examination), carry no quality points and are counted zero in the calculations made for this study. Averages of all the students' marks may also conveniently be indicated in the same fashion; thus, for example, an average of 3.5 quality credits would indicate a numerical average of about 90%. Similarly, an average of 2.1 quality credits would mean that the student's work had averaged only slightly better than a C grade.

It was possible, then, that any sampling of ninety-two cards would not offer sufficient data to give acceptable results for this study. Close examination of both sets of ninety-two cases then led to the conclusion that when taken in combination they would give a total sampling with characteristics which would provide a suitable basis for the study. For, taken in combination, the two samplings presented each an extreme coefficient of correlation (on the one hand .508 and on the other .313) which, when put together, should give an average correlation suitably characteristic of the entire group of 184 cases. This correlation was represented by the figure .391. Furthermore, other features of the two samplings offered extremes which when combined would again give an average suitably characteristic of the complete group: that is, the average intelligence quotient of the first ninety-two was 110, that of the second, 104; the average scholastic average for group one was 1.7, of group two, 1.9. For the combined samplings of 184 cases these gave an average intelligence quotient of 107, and a scholastic average of 1.8.

The complete total of 184 cases, then, was seen to offer a suitable sampling of the grand total of 845 cases included in the study and these 184 cases afforded the data used in the following pages.[6]

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6. As a check, the intelligence quotients and scholastic averages of the 661 cases remaining after the examination of the first 184 cards were studied. It was discovered that their intelligence quotients averaged 106 and their scholastic records averaged 1.8.
The 184 students involved in this selection entered the University from 1928 to 1934. Naturally, the length of time each student spent at the University varies. The distribution of student entrances is as follows: thirteen in 1928, thirty-two in 1929, sixty in 1930, forty-six in 1931, eleven in 1933, and twenty-two in 1934. Students who entered in 1932 took the Henmon-Nelson intelligence test and those entering in 1935 took the Shepherd English test, so comparable data were not available for them. The 184 students were distributed among the various colleges as follows: 151 in Liberal Arts, twenty-one of whom changed later to other colleges; eighteen in Engineering, fourteen of whom later changed to Liberal Arts; six in Education, and nine in Agriculture and Home Economics, four of whom changed later to other colleges.

CHAPTER IV

EVALUATION AND INTERPRETATION OF CORRELATION FIGURES

Table III is a summary of the findings of this study. In the first column are the factors whose coefficients of correlation are shown in column two.

TABLE III

CORRELATION COEFFICIENTS AND THEIR PROBABLE ERROR

Correlations	Coefficients	Probable Error
1. Modern foreign language grades and intelligence quotients	.211	±.047
2. Modern foreign language grades and English Placement Test scores	.487	±.038
3. Modern foreign language grades and scholastic averages	.715	±.024
4. Modern foreign language grades and English grades	.558	±.034
5. Intelligence quotients and scholastic averages	.391	±.042
6. Intelligence quotients and English grades	.395	±.042
7. English Placement Test scores and scholastic averages	.556	±.034
8. English Placement Test grades and English grades	.583	±.032

The third column indicates probable error[1]. The number of cases is, of course, 184 as described in Chapter III.

As shown by Table III, the first four calculations have to do with correlations the X values[2] of which are modern foreign language grades[3]. Inasmuch as two of the calculations - correlations 2 and 3 - have no comparable coefficients in Teague's study, additional calculations are supplied by Table IV as a check and to offer a point of comparison. These other calculations, as seen, are for intelligence quotients as the X values in calculations 5 and 6,

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1. "Probable error defines a limit, above and below the mathematical value of the statistical characteristic, within which, should the statistical characteristic be computed a large number of times from samples of equal size and unbiased choice, there will fall one-half of the different values of the characteristic; that is, the chance is 50:50 that the value will fall within the probable error". (Riggleman and Frisbee, Business Statistics, p. 292). The usual formula for computing probable error was employed: $P.E._p = .6745 \frac{1-p^2}{\sqrt{n}}$. (Ibid.)
2. The reader who may not be familiar with the term "X values" should read for its clarification the explanation of the sample calculation of coefficient of correlation in Appendix C.
3. These grades, 184 of them, represent in each case an averaging of all the modern foreign language marks earned by the student concerned.

and for English Placement Tests[4] as the X values in correlations 7 and 8.

The outstanding feature revealed by Table III on first glance is the fact that the correlations, with one exception, run low, varying from .211 for foreign language grades and intelligence quotients, to a high of .715 for foreign language marks and scholastic averages[5]. But as Sorenson points out[6], low coefficients are the rule in correlations the factors of which involve educational data; they usually fluctuate between ± .25 and ± .50. Such low coefficients are of course not strongly indicative of a decided relationship between the X and Y values of the calculation.

In general, then, Table III offers no evidence of a surprising or unexpected sort. As previous investigators have discovered, high accomplishment on an

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4. Appended to the thesis is a specimen copy of the University of Tennessee Placement Test in English.
5. The scholastic averages in this last calculation were compiled without the inclusion of modern foreign language grades. The scholastic averages of the fifth calculation of Table III, on the contrary, included foreign language marks, as did the calculation in line 7 of Table III.
6. Sorenson, Herbert, Statistics for Students of Psychology and Education, p. 276.

intelligence test, for example, is by no means sure to be followed by a similar quality of accomplishment in course work in the various subjects, including foreign language[7]. Teague's study of correlations which resulted in part in Table IV[8] reveals the same

TABLE IV

TEAGUE'S CORRELATIONS; THEIR COMPARISON WITH CERTAIN CORRELATIONS OF TABLE III

Correlations	Teague	This Study
1. Intelligence quotients and college foreign language. 664 students	.38	.211
2. Intelligence quotients and college English. 1144 students	.43	.395
3. Intelligence quotients and average college record. 1169 students	.25	.391
4. College English and English Placement Test. 576 students	.51	.583
5. Average college record and English Placement Test. 569 students	.21	.556

7. Cf. for example, Pintner's statement (Pintner, Rudolph, Intelligence Testing, Methods and Results, p. 294): "In general the relationship between psychological test and academic success is not very high. There are many other important elements entering into success in college studies besides the one of intelligence. Furthermore, the college student is very homogeneous in general intelligence as compared with the population at large, and this homogeneity of the group reduces the correlation".
8. Teague, O. D., "Predictive Significance of Pre-College Data with Reference to College Success", p. 68. Unpublished Master's thesis, University of Tennessee, 1931.

general situation as does our Table III; we include in the last column the comparable coefficients from Table III. Table IV reveals that Teague's correlations all run low. They are roughly comparable with those found in this study, the only really striking difference being his coefficient of .21 as compared with our .556 (line 5).

It is at once obvious that the coefficient .211 (Table III, line 1) is far too low to indicate any definite relationship between modern foreign language marks and intelligence quotients. Sorenson[9] asserts that when the correlation between two sets of variables is less than .60, no one can prophesy what the value of a variable of one series will be when the value of the other is known. Above .60 there is sufficient indication of relationship to predict average Y values from known X values. To be really indicative of a definite relationship, a coefficient of correlation must be .80 or above. A coefficient in the .50's, however, may be said to indicate a probable relationship deserving of a certain amount of credibility.

The coefficient .211, then, is much too low to indicate that a student who does well or poorly in

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9. Op. cit., p. 277.

foreign language will do equally as well or as poorly on the Terman Test of Mental Ability. If the Terman Test really measures intelligence, and if modern foreign language grades in the University of Tennessee truly measure student accomplishment in the subject, then it would seem that success or failure in foreign language depends very little on intelligence. Or does the acquisition of a foreign language demand such a specialized form of ability that this ability is not measured by a test of general intelligence? An attempt to answer such fundamental questions is beyond the province of this paper; the interested reader may find material for much speculation in Table III, and in comparing the various coefficients. It is of interest, for example, to note that the coefficient for intelligence quotients and English grades, .395 (Table III, line 6), is not enough higher than .211 to indicate a decidedly closer relationship. Indeed, correlation between intelligence quotients and academic subjects, as pointed out by Pintner in footnote 7 above, is usually low; Table III, line 5, reinforces the findings with its coefficient of .391, the scholastic averages of this correlation being no more than the averaging of the students' marks in the various subjects.

Teague's figure of .38 (Table IV, line 1) for the foreign language correlation, and of .43 and .25 for college English and the average college record (each of the three being one variable of a correlation the other variable of which is composed of intelligence quotients), are about what one would expect. Pintner (p. 293) reproduces thirteen coefficients which he takes from various investigators; each coefficient represents the relationship between academic success and intelligence quotients. Only one is as high as .65; two are in the..50's, three in the .40's, three in the .30's, three in the .20's. The lowest is .09. Of the thirteen, then, only the three highest are really high enough to indicate any sort of definite relationship. The same author (pp. 301-305) also gives lengthy tables from A. H. McPhail to show correlations which resulted from numerous other similar calculations; their central tendency falls between .40 and .45; two-thirds lie between .30 and .50. Other investigators have, in general, made comparable findings. Pintner concludes, however, (p. 305) that "all these correlations between marks and intelligence scores show conclusively that intelligence is one of the most important factors making for high marks. It is, perhaps, the one most important characteristic of

the individual so far as marks are concerned". But he goes on to say that "at the same time, it is clearly demonstrated that it is by no means the only factor. Other factors, such as industry, zeal, interest, health, also influence the marks a student will obtain".

When the findings of other students of the problem are examined to discover what they may have found as the correlation between intelligence quotients and marks in the various foreign languages, one learns that Root[10], using the Thorndike Intelligence Test, found correlations for intelligence quotients and French to be .40 to .45. When the language was German, the figure was .50; for Spanish it was .47 to .67. Perrin[11] discovered a considerably higher coefficient for Romance Languages, .79. An average coefficient of from .40 to .50 might seem to be a reasonable figure to expect, in view of these various findings; our figure of .211 and Teague's of .38 are the lowest of the lot, and would appear to be a trifle too low, just as Perrin's are too high, perhaps. One may only speculate why both Teague's study and our own should

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10. Cf. Pintner, op. cit., p. 306.
11. Ibid., pp. 305-306.

have produced coefficients so low when those of other investigators run higher.[12]

The second calculation of Table III, .487, that for modern foreign language grades and English Placement Test scores, although it is quite a bit higher than the coefficient .211 of previous discussion, is yet too low to suggest a really definite relationship. Once again, if our figures have validity, we see that it would be impossible to predict a student's exact accomplishment in foreign language on the basis of his

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12. It may be of interest to examine briefly the coefficients discovered for other subjects of the curriculum when correlated with intelligence quotients. Perrin (loc. cit.), all of whose figures run high, discovers for Mathematics a coefficient of .80, for Physics .78, for English .72 (contrast our figure .395, Table III, line 6), for Botany .72, Chemistry .69, Education .66, Geology .65. The number of students' records he examined varied from 104 in Physics to 482 in Mathematics and 780 in English. Root (loc. cit.), whose figures all run reasonably low, discovered coefficients as follows: for Biology .50 to .53, for Chemistry .43, for English .36 (cf. again our .395), for History .43 to .48, for Mathematics .39 to .61, for Physics .50. Spence (cf. Pintner, p. 306) reported coefficients of correlation between intelligence scores and marks in Psychology classes from .61 to .42; Nelson reported .51, .64, and .77; Miller calculated a coefficient of .37. As a by-product of the above, Pintner concludes (loc. cit.): "It is impossible to say that any one subject rather than any other correlates higher with intelligence".

score in another activity; this time on the English Placement Test. It is true, however, that the English Placement Test score would offer a slightly better basis for predicting success in foreign language than would the intelligence test. Teague offers no calculation involving the two factors in our second correlation with which a comparison might be made. Nor are figures available from other sources. In connection with this particular correlation, we observe from the table that English Placement Test scores correlate only slightly better with scholastic averages or with English grades than with foreign language grades (see calculations 7 and 8 of Table III). All three correlations are perhaps high enough to permit the conclusion that in general a student who achieves a certain score on the English Placement Test is apt to achieve an approximately comparable grade in foreign language or in English or in his college work in general. Teague (cf. Table IV) found a coefficient of .51 for English grades and the English Placement Test, but his coefficient for the students' complete college record and the Placement Test ran

very low, .21[13]. In the light of the correlations supplied by calculations 2, 7 and 8 of Table III, one is not surprised at the coefficient .558 for modern foreign language grades and English grades. It seems quite definitely shown by Table III that there is a closer relationship between accomplishment in English and foreign language than between marks in either of these and intelligence quotients.

There remains for comment from Table III only the third calculation. This shows the highest coefficient of all, .715. It is not entirely unexpected, as records of grades made available to the University faculty by the Registrar during the last few years have indicated a reasonably close correspondence on the one hand between grades of all the departments of the University and, on the other

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13. Information concerning correlations for English Placement Test (Shepherd) and various subjects is supplied by the Teachers' manual of the Shepherd Test (The Shepherd English Test, A Placement Test for College Freshmen, Forms A and B, Houghton Mifflin Company, New York, 1929). The numbers of cases investigated range from 421 to 878. For English the coefficient is .46, for Modern Language .53, for Social Science .48, for Natural Science .39, for Mathematics .39. These figures are all reasonably low; they compare very favorably with the general run of educational correlations, as we have seen.

hand, of those given by the departments of modern foreign language. It seems obvious that, according to the figure .715, student accomplishment in modern foreign language work is likely more often than not to parallel more or less closely accomplishment in other departments of the University.

CHAPTER V

CONCLUSION

In summary, the major findings made in this study follow. According to our figures, there is no close correlation between modern foreign language grades and intelligence quotients, a finding previously made by Teague at this University and by a number of other investigators elsewhere. In general, however, the correlation for modern foreign language is about as high as for other subjects of the curriculum. In contrast with the low correlation afforded by intelligence quotients as one factor of the variable, English Placement Test scores offer a somewhat higher correlation, whether with modern language grades (.487), with scholastic averages (.556), or with English grades (.583). Teague's earlier findings here also offer general substantiation. It would seem that marks in English, whether in the Placement Test, or in class work, are likely to correspond more or less closely with modern foreign language grades. The highest correlation of all is that for foreign language marks and scholastic averages, showing that in general student accomplishment in modern foreign

language in the University of Tennessee is roughly the same as in other subjects of the curriculum.

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A P P E N D I C E S

APPENDIX A

MODEL CARD

Doe, John	1930 L. A.	Central High School, Knoxville
110 - 75 - 2.9		
2.8 - 3 - 2.7		

As the data above show, the Model Card contains in the first line the student's name, the year in which he entered the University (1930), the college in which he registered (L. A., i.e., Liberal Arts), the high school from which he came to the University of Tennessee. In line two are given his intelligence quotient (110), determined by examination on his entrance to the University, his English Placement Test grade (75), and his scholastic average (2.9). In line three are given his scholastic average exclusive of modern foreign language grades (2.8), his average

grade in English (3), and the average of his marks in modern foreign language courses (2.7).

APPENDIX B

MODEL GRADE SHEET

Doe, John U. T. 1928-1929	Carman College 1929-1930	U. T. 1930-1931	U. T. 1931-1932
Fall	Fall	Fall	Fall
3 Eng. 111	2	3 Eng. 211	4
3 Fr. 111	3 Fr.211 B	3 Sp. 111	2
2	1	2	1
1	4	0 (E)	1
2	3	1	2
1	1	3	
Winter	Winter	Winter	Winter
3 Eng. 112	4	0 (F) Eng. 212	2
2 Fr. 112	1	0 (I)	4
3	2	0 (X)	1
1	2		3
2	3		2
3	1		
Spring		Spring	Spring
3 Eng. 113		2	
3 Fr. 113		1	
4		3	
2			
1			
1			
Summer			
2			
1			
3			

For each student for whom a record was kept, a grade sheet was compiled, to be used in computing averages. The sheet had four columns, one for each school year. In the case of a transfer student, the college from which he transferred was listed above the academic year of his residence there. Each column was divided into sections for the four quarters of the school year. Within each section his courses in modern foreign languages and English were set down, preceded in each case by the quality points or credits earned in the course, and followed by the course number (111 is first quarter French, 112 second quarter; 211 is second year French, the first quarter, etc.). For other than modern foreign language and English courses only the quality points are set down. E, F, I, and X, as seen, are given zero quality points.

APPENDIX C

TABLE V

CALCULATION OF CORRELATION BY THE SPEARMAN RANK-DIFFERENCE METHOD...INTELLIGENCE QUOTIENTS AND SCHOLASTIC AVERAGES

	Scores		Ranks			
	Intelligence Quotients X	Scholastic Averages Y	X	Y	D	D^2
1.	107	1.4	38.5	71.	32.5	1056.25
2.	99	.4	73.	91.	18.	324.
3.	118	2.6	54.5	13.5	41.	1681.
4.	103	2.7	5.5	19.5	14.	196.
5.	95	1.1	84.	79.5	4.5	20.25
6.	102	3.2	59.	4.5	44.5	1980.25
7.	108	2.7	33.5	13.5	20.	400.
8.	100	1.6	68.5	63.5	5.	25.
9.	108	2.	33.5	39.5	6.	36.
10.	110	1.7	25.5	59.5	34.	1156.
11.	131	2.7	1.	13.5	12.5	156.25
12.	95	1.5	84.	67.5	16.5	272.25
13.	104	1.9	52.5	47.5	5.	25.
14.	95	0	84.	92.	8.	64.
15.	106	.9	45.5	86.	40.5	1640.25
16.	109	2.	29.5	39.5	10.	100.
17.	105	2.3	50.	28.5	21.5	462.25
18.	102	1.8	59.	54.	5.	25.
19.	101	1.1	64.	79.5	15.5	240.25
20.	100	.5	68.5	89.	20.5	420.25
21.	106	1.5	45.5	67.5	22.	484.
22.	98	1.9	76.	47.5	28.5	812.25
23.	102	2.4	59.	26.	33.	1089.
24.	117	2.2	7.5	31.	23.5	552.25
25.	109	2.7	29.5	13.5	16.	256.
26.	107	1.3	38.5	74.5	36.	1296.
27.	100	2.	68.5	39.5	29.	841.
28.	100	2.7	68.5	13.5	55.	3025.
29.	106	1.6	45.5	63.5	18.	324.
30.	101	2.5	64.	23.	41.	1681.
31.	99	1.4	73.	71.	2.	4.
32.	100	2.5	68.5	23.	45.5	2070.25
33.	116	2.4	9.5	26.	16.5	272.25
34.	102	1.8	59.	54.	5.	25.
35.	103	2.1	54.5	33.5	21.	441.
36.	102	1.9	59.	47.5	11.5	132.25
37.	109	1.7	29.5	59.5	30.	900.
38.	104	2.5	52.5	23.	29.5	870.25

Continued

TABLE V - Continuation

CALCULATION OF CORRELATION BY THE SPEARMAN RANK-DIFFERENCE METHOD...INTELLIGENCE QUOTIENTS AND SCHOLASTIC AVERAGES

	Scores		Ranks			
	Intelligence Quotients X	Scholastic Averages Y	X	Y	D	D^2
39.	96	2.1	81.	33.5	47.5	2256.25
40.	101	.5	64.	89.	25.	625.
41.	94	1.3	86.5	74.5	12.	144.
42.	105	2.	50.	39.5	10.5	110.25
43.	100	1.2	68.5	77.	8.5	72.25
44.	107	2.	38.5	39.5	1.	1.
45.	119	2.8	3.5	8.5	5.	25.
46.	102	1.	59.	83.	24.	576.
47.	116	2.7	9.5	13.5	4.	16.
48.	106	1.8	45.5	54.	8.5	72.25
49.	117	3.9	7.5	1.	6.	36.
50.	111	2.2	22.	31.	9.	81.
51.	119	2.	3.5	39.5	36.5	1332.25
52.	109	2.6	29.5	19.5	10.	100.
53.	92	1.8	89.	54.	35.	1225.
54.	115	2.8	12.5	8.5	4.	16.
55.	61	1.1	92.	79.5	12.5	156.25
56.	105	.9	50.	86.	36.	1296.
57.	98	1.3	76.	74.5	1.5	2.25
58.	94	1.9	86.5	47.5	39.	1521.
59.	96	1.8	81.	54.	27.	729.
60.	107	1.5	38.5	67.5	29.	841.
61.	99	1.	73.	83.	10.	100.
62.	107	2.6	38.5	19.5	19.	361.
63.	115	3.	12.5	6.	6.5	42.25
64.	111	0	22.	89.	67.	4489.
65.	87	1.6	91.	63.5	27.5	756.25
66.	97	1.4	78.5	71.	7.5	59.25
67.	111	2.	22.	39.5	13.	169.
68.	112	3.2	17.5	4.5	13.	169.
69.	109	1.9	29.5	47.5	18.	324.
70.	123	3.8	2.	2.	0	0
71.	112	2.3	17.5	28.5	11.	121.
72.	118	2.2	5.5	31.	25.5	650.25
73.	93	1.5	88.	67.5	20.5	420.25
74.	107	2.9	38.5	7.	31.5	992.25

Continued

TABLE V - Continuation

CALCULATION OF CORRELATION BY THE SPEARMAN RANK-DIFFERENCE METHOD...INTELLIGENCE QUOTIENTS AND SCHOLASTIC AVERAGES

	Scores		Ranks			
	Intelligence Quotients X	Scholastic Averages Y	X	Y	D	D^2
75.	111	2.	22.	39.5	17.5	306.25
76.	107	1.8	38.5	54.	15.5	240.25
77.	107	1.7	38.5	59.5	21.	441.
78.	111	1.9	22.	47.5	25.5	650.25
79.	110	1.6	25.5	63.5	38.	1444.
80.	106	3.6	45.5	3.	42.5	1806.25
81.	98	2.	76.	39.5	36.5	1332.25
82.	112	1.1	17.5	79.5	62.	3844.
83.	102	1.3	59.	74.5	15.5	240.25
84.	112	1.	17.5	83.	65.5	4290.25
85.	97	1.7	78.5	59.5	19.	361.
86.	91	.9	90.	86.	4.	16.
87.	113	2.6	15.	19.5	4.5	20.25
88.	109	1.8	29.5	54.	24.5	600.25
89.	96	2.4	81.	26.	55.	3025.
90.	115	2.7	12.5	13.5	1.	1.
91.	115	2.7	12.5	13.5	1.	1.
92.	106	2.	45.5	39.5	6.	36.
					$\Sigma D^2 =$	63898.25
						p = .508

Table V presents a model calculation of the type used in the study. It shows the computation of the coefficient of correlation between the intelligence quotients and scholastic averages for the first ninety-two cases examined. In column one are the numbers of the cases, from one to ninety-two. Column two shows the intelligence quotients and column three the scholastic averages. In column four the intelligence quotients are ranked and in column five are ranked the scholastic averages. Column six shows the difference in ranks between intelligence quotients and scholastic averages. Column seven contains the squares of the differences. At the bottom of column seven is given the sum of the squares of the differences, and beneath the sum is the coefficient of correlation finally arrived at.

Below are given the Spearman formula and its application:

$$p = \frac{1 - 6\Sigma D^2}{n\,(n^2-1)} \quad ,$$

in which $\underline{p}$ is the coefficient of correlation, $\underline{\Sigma D^2}$ is the sum of the squares of the differences between the X and Y variables (Ranks), and $\underline{n}$ is the number of cases.

Applying the figures in Table V to the formula we get

$$p = 1 - 6 \times \frac{63,898.25}{92\ (92^2 - 1)}$$

$$= 1 - \frac{383,389.50}{92\ (8464 - 1)}$$

$$= 1 - \frac{383,389.50}{778,596}$$

$$= 0.508$$

Appended herewith are a copy of the Terman Group Test of Mental Ability, Form B, and The University of Tennessee Placement Test in English.

TERMAN GROUP TEST OF MENTAL ABILITY

For Grades 7 to 12

Prepared by Lewis M. Terman, Stanford University, California

EXAMINATION: FORM B

1. Name .....
   First name Last name
2. Boy or girl.....Grade.....High or Low.....
3. Age last birthday.....Date of birthday.....
   Month Day Year
4. Name of city (or county).....
5. Name of school.....
6. Name of teacher.....
7. Date of this examination.....19.....
   Month Day Year

Do not turn the page until you are told to.

Test	Score	Remarks or Further Data
1. Information		
2. Best Answer		
3. Word Meaning		
4. Logical Selection		
5. Arithmetic		
6. Sentence Meaning		
7. Analogies		
8. Mixed Sentences		
9. Classification		
10. Number Series		
Total		

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TEST 1. INFORMATION

Draw a line under the ONE word that makes the sentence true, as shown in the sample.

SAMPLE. Our first President was
Adams Jefferson Lincoln Washington

1 The most gold is produced in
Alaska Tennessee Texas New York 1
2 A peck is a fourth of a
barrel bushel gallon keg 2
3 The Yale is a kind of
screw lock hammer wrench 3
4 Chalk is a kind of
flour limestone slate marble 4
5 Among birds that migrate are
eagles hawks owls robins 5

6 Sonata is a term used in
drawing football mathematics music 6
7 Socrates was a
politician philosopher scientist general 7
8 " Treasure Island " tells about
Micawber Uncas Long John Mowgli 8
9 The Pharaohs were kings of
Babylon Egypt Jerusalem Rome 9
10 Long-distance running most often injures the
heart legs stomach nerves 10

11 The dynamo produces
dynamite electricity powder gas 11
12 Polo is a kind of
disease firearm game work 12
13 A barometer measures
air-pressure distance electricity time 13
14 Asbestos comes from
bones cotton mines wool 14
15 An eight-sided figure is called a
trapezium scholium parallelogram octagon .. 15

16 Tweed is a kind of
cloth drink instrument weed 16
17 The turquoise is usually
blue brown red yellow 17
18 The bat is most closely related to the
butterfly mouse owl swallow 18
19 Perjury is a term used in
pedagogy law theology medicine 19
20 " Robinson Crusoe " was written by
Stevenson Hawthorne Defoe Cooper 20

Right .....

TEST 2. BEST ANSWER

Read each question or statement and make a cross before the BEST answer, as shown in the sample.

SAMPLE

Why do we buy clocks? Because
1 We like to hear them strike.
2 They have hands.
× 3 They tell us the time.

1 **We should "think twice before we speak," because**
1 We may think of more things to say.
2 We are then more sure to say the right thing.
3 If we speak too quickly, we may stammer.

2 **The saying, "Idle brains are the devil's workhouse," means**
1 The devil works with his brains.
2 People should not work for the devil.
3 People who are idle get into trouble.

3 **The saying, "It's an ill wind that blows nobody good," means that**
1 People often profit from the misfortunes of others.
2 Winds do great damage.
3 Winds never do any good.

4 **The saying, "Destroy the lion while it is young," means**
1 It is wicked to kill lions when they are old.
2 Young lions are most dangerous.
3 Weed out bad habits before they are too firmly established.

5 **The saying, "The proof of a pudding is in the eating," means**
1 Puddings are made to be eaten.
2 Puddings should be tested before they are served.
3 We can only tell what a thing is like by trying it.

6 **Why are electrical engineers highly paid? Because**
1 Their ability is much in demand.
2 They have a college education.
3 They work long hours.

7 **Freezing water bursts pipes because**
1 Cold makes the pipes weaker.
2 Water expands when it freezes.
3 The ice stops the flow of water.

8 **Why should we have Congressmen? Because**
1 The people are too many to meet and make their laws.
2 The people must be ruled.
3 Congressmen are usually honest.

9 **The cause of echoes is**
1 The reflection of sound waves.
2 The presence of electricity in the air.
3 The presence of moisture in the air.

10 **If a man had a million dollars he ought to**
1 Pay off the national debt.
2 Contribute to various worthy charities.
3 Give it all to some poor man.

11 **The saying, "A bad workman quarrels with his tools," means**
1 A bad workman is usually quarrelsome.
2 If the workman loses his temper, he is likely to break his tools.
3 A bad workman often excuses himself by blaming his tools.

Right..... × 2 = *Score*.....

TEST 3. WORD MEANING

When two words mean the SAME, draw a line under "SAME."
When they mean the OPPOSITE, draw a line under "OPPOSITE."

SAMPLES	fall — drop	same — opposite	
	north — south	same — opposite	
1	alert — sluggish	same — opposite	1
2	active — passive	same — opposite	2
3	procure — obtain	same — opposite	3
4	minimum — maximum	same — opposite	4
5	kindle — quench	same — opposite	5
6	hazardous — dangerous	same — opposite	6
7	exit — entrance	same — opposite	7
8	chasm — abyss	same — opposite	8
9	agile — nimble	same — opposite	9
10	remote — near	same — opposite	10
11	expand — contract	same — opposite	11
12	abhor — detest	same — opposite	12
13	competent — qualified	same — opposite	13
14	entice — allure	same — opposite	14
15	concave — convex	same — opposite	15
16	gravity — levity	same — opposite	16
17	sacred — hallowed	same — opposite	17
18	con — pro	same — opposite	18
19	adversary — opponent	same — opposite	19
20	optional — compulsory	same — opposite	20
21	defile — purify	same — opposite	21
22	senile — aged	same — opposite	22
23	illustrious — exalted	same — opposite	23
24	profuse — scanty	same — opposite	24
25	inert — energetic	same — opposite	25
26	heinous — atrocious	same — opposite	26
27	caprice — whim	same — opposite	27
28	apathy — indifference	same — opposite	28
29	acid — alkaline	same — opposite	29
30	indict — arraign	same — opposite	30

Right..... *Wrong*..... *Score*.....

TEST 4. LOGICAL SELECTION

In each sentence draw a line under the TWO words that tell what the thing ALWAYS has. Underline TWO, and ONLY TWO, in each line.

SAMPLE. A man always has
body cap gloves mouth money

1 A snake always has
poison rattle stripes tail tongue 1
2 A bicycle always has
brakes frame rubber pump wheels 2
3 A box always has
depth hinge lid sides wood 3
4 Food always has
nutriment salt starch sweetness taste 4
5 A soldier always has
bayonet commander duty flag tent 5

6 An automobile always has
battery motor top wheels wind-shield 6
7 A policeman always has
authority cap club duty uniform 7
8 A newspaper always has
advertisements cartoons editor news pictures 8
9 An official always has
badge duties rights salary uniform 9
10 A nation always has
army inhabitants laws navy rivers 10

11 A debtor always has
creditor freedom honesty obligation property 11
12 Night always has
darkness hours moon stars stillness 12
13 A wheel always has
center circumference spokes tire wood 13
14 Anxiety always involves
awe dread grief insomnia uneasiness 14
15 Admiration always involves
esteem flattery humility love respect 15

16 A store always has
bookkeeper cash-box clerks keeper supplies 16
17 An invention always has
inventor machinery newness patent value 17
18 A gentleman is always
considerate educated honest wise witty 18
19 A duet always has
accompaniment instruments performers music voices .. 19
20 Antipathy always involves
antagonism disgust dislike fear jealousy 20

Right .....

TEST 5. ARITHMETIC

Find the answers as quickly as you can.
Write the answers on the dotted lines.
Use the bottom of the page to figure on.

---

1 Frank has 12 marbles. He bought 3 more, and then lost 6. How many had he left? *Answer* .....

2 What number multiplied by 16 equals 24×2? *Answer* .....

3 A man bought some sheep for \$150. He sold them for \$200, gaining \$5 per head. How many did he buy? *Answer* .....

4 John earns \$2.50 per day, James \$3.75 per day. How much more does James earn than John in forty days? *Answer* .....

5 How many quarts of water will a can $6 \times 10 \times 12$ inches hold if a quart is 60 cubic inches? *Answer* .....

6 A boy had $\frac{3}{8}$ of a bushel of nuts and sold half of them. What fraction of a bushel had he left? *Answer* .....

7 A man bought a horse for \$160 and sold it for \$200. The gain was what per cent of the cost? *Answer* .....

8 If $2\frac{1}{2}$ dozen eggs cost \$2, what is the price per dozen? *Answer* .....

9 Half of what number equals $\frac{1}{3}$ of 21? *Answer* .....

10 A borrows \$500 at $7\frac{1}{4}$ per cent, and B borrows \$500 at $6\frac{1}{4}$ per cent. How much more interest does A pay in a year than B? *Answer* .....

11 $\frac{3}{4}$ of a bushel of nuts is divided equally among five people. What fraction of a bushel does each get? *Answer* .....

12 If $4\frac{1}{2}$ tons of hay cost \$36, what will $2\frac{1}{2}$ tons cost? *Answer* .....

Right ..... $\times 2 =$ *Score* .....

TEST 6. SENTENCE MEANING

Draw a line under the right answer, as shown in the samples.

SAMPLES	Is coal obtained from mines?	Yes	No	
	Are all men six feet tall?	Yes	No	
1	Are cartoons made by cameras?	Yes	No	1
2	Are transparent substances used in windows?	Yes	No	2
3	Do hoboes ever wear dilapidated garments?	Yes	No	3
4	Is burlap a kind of lumber?	Yes	No	4
5	Do hermits usually live in seclusion?	Yes	No	5
6	Can time be measured with a barometer?	Yes	No	6
7	Are invalids usually elated?	Yes	No	7
8	Is a hypocrite usually insincere?	Yes	No	8
9	Do all birds have instincts?	Yes	No	9
10	Are conspicuous objects readily seen?	Yes	No	10
11	Does a quotient result from multiplication?	Yes	No	11
12	Do lagoons migrate periodically?	Yes	No	12
13	Do novelists ever prefer realism?	Yes	No	13
14	Is astigmatism a form of religion?	Yes	No	14
15	Does an anæsthetic allay pain?	Yes	No	15
16	Are prostrate forms often vertical?	Yes	No	16
17	Are divergent aims usually harmonious?	Yes	No	17
18	Do sovereigns owe allegiance to their subjects?	Yes	No	18
19	Are discreet persons usually trustworthy?	Yes	No	19
20	Have enfranchised people the right to vote?	Yes	No	20
21	Do retrograde movements lead to progress?	Yes	No	21
22	Is a parasite a living organism?	Yes	No	22
23	Does synthesis mean putting together?	Yes	No	23
24	Should deleterious habits be emulated?	Yes	No	24

Right.....*Wrong*.....*Score*.....

TEST 7. ANALOGIES

SAMPLES
Ear is to hear as eye is to
table see hand play
Hat is to head as shoe is to
arm coat foot leg

Do them all like samples.

---

1 Picture is to see as sound is to
noise music hear bark 1
2 Uncle is to nephew as aunt is to
brother sister niece cousin 2
3 Add is to subtract as multiply is to
add divide arithmetic increase 3
4 Shell is to nut as skin is to
person soft white coarse 4
5 Tree is to forest as person is to
couple men women crowd 5

6 Stone is to marble as wood is to
tall cut oak pile 6
7 10 is to 100 as 12 is to
16 24 144 288 7
8 Abide is to depart as stay is to
over home play leave 8
9 Food is to man as fuel is to
engine burn coal wood 9
10 Author is to book as artist is to
painter brush picture easel 10

11 Complex is to simple as hard is to
brittle money easy work 11
12 Imitate is to copy as invent is to
originate study Edison machine 12
13 Bad is to worse as worse is to
worst better best good 13
14 Wolf is to sheep as cat is to
fur kitten dog mouse 14
15 Past is to present as yesterday is to
today tomorrow Christmas gone 15

16 Go is to went as rise is to
fall rose rising fell 16
17 Square is to cube as circle is to
line round square sphere 17
18 Policeman is to officer as dictionary is to
words book large school 18
19 $\frac{4}{3}$ is to $\frac{1}{3}$ as 8 is to
10 6 4 2 19
20 Seldom is to never as little is to
small none large often 20

Right .....

TEST 8. MIXED SENTENCES

The words in each sentence below are mixed up. If what a sentence means is TRUE, draw a line under "TRUE." If what it means is FALSE, draw a line under "FALSE."

SAMPLES	hear are with to ears	true	false	
	eat gunpowder to good is	true	false	
1	countries several produced wheat in is	true	false	1
2	pays cautious it be to often	true	false	2
3	north all railroads south and run	true	false	3
4	men industrious pay good should get	true	false	4
5	temperatures freezes water high at	true	false	5
6	birds on their nests ground the some make	true	false	6
7	to is it easy a mud deep through drive car	true	false	7
8	sleepy work is is hard it to when one	true	false	8
9	friends in us disaster often false desert	true	false	9
10	is it all away throw wisest money to one's	true	false	10
11	wind when the the all blows fall trees	true	false	11
12	feeling is of painful exaltation the	true	false	12
13	seldom birds' diamonds nests are in found	true	false	13
14	inflict men pain needless cruel sometimes	true	false	14
15	always sleeplessness clear causes a conscience	true	false	15
16	rich rich have born all men been	true	false	16
17	and emotions sorrow similar grief are	true	false	17
18	knows than pupil a teachers always his more	true	false	18

Right.....*Wrong*.....*Score*.....

TEST 9. CLASSIFICATION

SAMPLES
1 bullet cannon gun sword pencil
2 Canada Chicago China India France

In each line cross out the word that does not belong there.
Cross out JUST ONE WORD in each line.

---

1 elm brier maple oak poplar 1
2 needle pan stitch thimble thread 2
3 Governor King Mayor President Priest 3
4 baby calf colt doll kitten 4
5 Democrat Methodist Republican Tory Whig 5

6 Cæsar Grant Napoleon Shakespeare Washington 6
7 Anna Emma John Lucy Sarah 7
8 heart ears eyes nose tongue 8
9 close distant far loud near 9
10 author essay novel poem story 10

11 cat cow dog pig wolf 11
12 blackboard chalk crayon pen pencil 12
13 clay pebble rock stone wood 13
14 automobile barometer clock speedometer thermometer 14
15 algebra arithmetic geometry history trigonometry 15

16 alfalfa clover corn grass timothy 16
17 carefulness forethought industry poverty thrift 17
18 beg borrow earn inherit lend 18

Right.....

TEST 10. NUMBER SERIES

SAMPLES	5	10	15	20	25	*30*	*35*
	20	18	16	14	12	*10*	*8*

In each row try to find out how the numbers are made up, then on the two dotted lines write the TWO numbers that should come next.

1st Row				3	4	5	6	7	8	....	....
2d Row			3	6	9	12	15	18	....	....	
3d Row		10.8	9.7	8.6	7.5	6.4	5.3	....	....		
4th Row			5	6	8	9	11	12	....	....	
5th Row		27	27	23	23	19	19	....	....		
6th Row			0	$\frac{2}{3}$	$1\frac{1}{3}$	2	$2\frac{2}{3}$	$3\frac{1}{3}$	....	....	
7th Row			576	288	144	72	36	....	....		
8th Row					2	10	50	....	....		
9th Row		30	33	34	37	38	41	....	....		
10th Row	23	22	21	19	18	17	15	14	....	....	
11th Row			$\frac{3}{32}$	$\frac{3}{16}$	$\frac{3}{8}$	$\frac{3}{4}$	$1\frac{1}{2}$	3	....	....	
12th Row			81	27	9	3	1	$\frac{1}{3}$	....	....	

Right ..... × 2 = *Score* .....

Total Score: .....

Paper read by .....

THE UNIVERSITY OF TENNESSEE

Placement Test in English

September 21, 1932

Name .....
Last name First name Middle initial

High School .....

Year Graduated ..... Home Address .....

Name of Last English Teacher .....

In what college of the University do you expect to register? .....

I (20%)

Cross out all incorrect words in the following sentences:

1. Everyone should mark (their, his) sentences carefully.
2. There was no reason for (him, his) leaving so early.
3. Come with my brother and (I, me).
4. All of (we, us) boys were hopeful.
5. Reward (whomever, whoever) is deserving.
6. I believe it is (he, him).
7. He was a man (whom, who) everybody considered honest.
8. (Whom, who) did they elect to represent them?
9. If I (were, was) you, I should stay.
10. He was (notorious, notable) for his bold robberies.
11. Please latch the door (good, well) when you leave.
12. There was no place for (he, him) and his family to go.
13. The child's crying (aggravated, annoyed) the speaker.
14. Neither the boy nor the girl (were, was) pleased.
15. Everybody in the room (were, was) astonished.
16. I intended to (go, have gone) yesterday.
17. I hope that he (does'nt, don't) know it.
18. Let the bucket (sit, set) where it is.
19. (We, us) boys were always late.
20. A comparison of these books (shows, show) many differences.

Score: (20 minus wrongs) .....

II (20%)

Punctuate (if necessary) each of the following sentences:

1. It was a cold dark stormy night.
2. Mark Twains parents once lived in Jamestown Tennessee.
3. He was often late to his work therefore he lost his position.
4. Paderewski the great pianist was once premier of Poland.
5. Yes lets forget our troubles.
6. After all of the students had been seated the reading began.
7. Those who wish to succeed must learn to sacrifice.
8. Although Frank Parker is very young he is a great tennis player.
9. I hope replied he that you will not be disappointed.
10. Dryden who has been called the father of modern English prose wrote more poetry than prose.
11. I cannot go he replied.
12. I saw that he would never succeed otherwise I should have encouraged him.
13. Please come over with us we need your assistance.
14. There will be we hope a marked improvement.
15. When he found that the road was blocked he surrendered.
16. He explained how he had been forced to resign.
17. We rose at daybreak packed the car and started on our way.
18. The guide hoping that he would soon find the river pushed straight ahead.
19. Knoxvilles new bridge which crosses the river at the foot of Henley Street is a great aid to traffic.
20. Students who submit their themes late will be given low grades.

Score: (20 minus wrongs).....

III (20%)

Some of the following sentences are good and some are bad. Check those which are good and rewrite those which are bad.

1. Books meant little to James. His chief interest being the care of his pets.
2. It is entirely his fault, he should never have started.
3. Leaving the train, the bag was forgotten.
4. Those whom we admire we follow.
5. "This room is cold", he said, "we should build a fire".
6. The boys parted at Memphis. One going east and one west.
7. On approaching the campus, the trees obscured the buildings.
8. If he were here, our worries would be over.
9. Because he wanted to stay until the following day.
10. The loss of his position caused him much worry.

Score: (20 minus two times wrongs).....

IV (40%)

On this and the following page write a theme of about 250 words on one of the following subjects:

1. Why I Like Swimming (or some other sport).
2. How to Hunt Squirrels (or other animals).
3. My Favorite Reading.
4. How to Pack a Trunk.
5. A College Girl's Wardrobe.
6. What I Expect from College.