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A study of the predictors of first year achievement at Indiana State Teachers College

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A STUDY OF THE PREDICTORS OF FIRST YEAR ACHIEVEMENT AT INDIANA STATE TEACHERS COLLEGE

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

For a number of years college administrators have pondered the questions, "Whom shall we admit to college?" and, "Can we predict success in college?" Many privately endowed institutions of higher learning have set up a selective and restricted process for admission based on certain criteria. The state-supported institutions have adhered to the democratic idea--that of giving equal educational opportunity to all. In regard to the admission requirements the catalog of Indiana State Teachers College says, "All graduates of commissioned high schools or persons with equivalent scholarship are eligible for admission to Indiana State Teachers College."[1] This situation brings into Indiana State Teachers College a class of freshmen widely diversified in intelligence, high school achievement, and habits of study. The question then arises, "Can any of these characteristics be measured at the time of entrance in a way which will indicate the quality of college achievement to be expected?"

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[1] Curriculums for 1947-48, Catalog Issue (Bulletin of Indiana State Teachers College at Terre Haute, Vol. 40, No. 2. Terre Haute, Indiana: Indiana State Teachers College, April, 1947), p. 19.

I. THE PROBLEM

Statement of the problem. It was the purpose of this study (1) to analyze the measures available at the end of freshman week to determine which ones to use as the criteria for the study, (2) to compare the selected measures with the scholarship index attained at the end of the first quarter and at the end of the third quarter, and (3) to determine which of the measures has the highest relationship to college achievement as expressed by the scholarship index.

Importance of the study. Much of our present failure to provide further education for high school graduates who could profit by it is not due so much to lack of resources as to lack of precision in our knowledge of their abilities. If college administrators know the factors that can be used to predict college success and the relative value of each, much valuable time will be saved in the guidance and educational programs will be to the better advantage of the students.

In the fall of 1946 slightly more than 2,000,000 students were enrolled in college. With the opening of the fall term of 1947 in the institutions of higher learning throughout the country, approximately 2,400,000 students

will enter college for higher education.[2] This increase is caused mainly by the large number of veterans who are entering college under the educational provisions of the GI Bill of Rights. All in all, the situation adds up to the fact that the colleges are going to be overcrowded and will continue to be for some years until the large backlog of some 6,000,000 veterans who have applied for education under the GI Bill has been absorbed.[3] Many colleges and universities with limited facilities have been forced to set up rigid entrance requirements in order to select only those students whose prospects of success are reasonably assured. If this condition exists and will continue to exist, we must be able to pick out in the high-school graduates those factors that can be measured and used to predict the degree of success in college.

II. DEFINITIONS OF TERMS USED

Achievement. In this study achievement has been used to mean the scholarship index attained. It is recognized that there are other forms of college achievement than scholarship, but for statistical purposes the only way

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[2] John Dale Russell, "Enrollment Trends in Higher Education," Journal of American Association of Collegiate Registrars, 22:413, July, 1947.

[3] News item in the Terre Haute Tribune, August 20, 1947.

achievement could be measured was by means of the scholarship index.

Correlation. Correlation is defined as the relation of one quantity to another. Likewise, the coefficient of correlation is a measure of relationship between two sets of data on the same set of pupils.

Quarter. At Indiana State Teachers College the college year is divided into four parts; namely, three terms of twelve weeks each and a summer session of ten weeks. Each of these terms is defined as a quarter.

Scholarship index. Roughly, the scholarship index is the average grade. A system of scholarship points has been established on the basis of four quarter-hours, using four points for each "A" grade, three points for each "B" grade, two points for each "C" grade, one point for each "D" grade, and no points for each "F". The ratio of the student's scholarship points to his prepared credit hours attempted will be his scholarship index.[4]

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[4] Curriculums for 1947-48, Catalog Issue, op. cit., p. 170.

III. ORGANIZATION OF REMAINDER OF THE THESIS

This study will consist of three more parts or chapters. The second chapter is devoted to the analysis and review of other literature on the problem of the prediction of college success. The third section presents a description of the materials used, the method of procedure, the treatment of the data, and the results of the investigation. The concluding chapter provides a summation of the findings of the research and presents conclusions to be derived from this study.

CHAPTER II

REVIEW OF THE LITERATURE

Investigators have approached the problem of the prediction of college success and achievement from many different avenues and from many varied starting points. A selection of the more significant studies on this subject and related topics was made by the writer and reviewed as a section of the thesis. Brief summaries of the work of the various investigators will be given.

Study by Lycia O. Martin. One of the most important and significant studies on the problem of the prediction of success in a teachers' college is that of Lycia O. Martin.[1] The high school graduates that entered the State Teachers College at Trenton, New Jersey, in 1936 were studied throughout the four-year period, and then their teaching success was checked after one year of actual teaching by means of superintendents' ratings. Also their achievement as measured by college marks was checked at the end of the first semester, at the end of the first year, at the end of the second and third years, and at the end of the four

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[1] Lycia O. Martin, The Prediction of Success for Students in Teacher Education (New York: Bureau of Publications, Teachers College, Columbia University, 1944) 110 pp.

years' work. This was done to provide a reliable check on the relationship existing between the predicted college mark and the actual college mark.

Miss Martin used a total of thirty variables in her study. The writer has selected only a few of these upon which to comment. In the prediction of over-all four-year grades, the first-semester grades and the first-year grades taken alone correlate .807 and .899. No combination of variables was as good a predictor as these freshman grades were. First-semester grades showed a correlation of .43 with the results of an examination of general high-school content called the Total Co-operative General Culture Test. First-year grades and the results on the Total Co-operative General Culture Test correlated with a value of .48. When the marks at the end of the first semester and at the end of the first year were correlated, a fairly high value of .69 was noted.

First-semester marks and the results of the American Council on Education Examination presented a correlation of .48. The relationship between the first-year marks and the results of the American Council Examination was not much higher, showing a correlation of .50 existing between the two variables.

When checking those variables which could be known at the time of admission and which correlate above .40 with the

first-semester grades and with the first-year grades, the writer found only five that met these criteria. These are (1) science (College Entrance Examination), .395 and .423 respectively; (2) history (College Entrance Examination), .417 and .452 respectively; (3) elementary subject mastery test (Teachers College Personnel Association Test), .554 and .625 respectively; (4) English (Teachers College Personnel Association Test), .500 and .492 respectively; and (5) American Council Psychological Examination, .484 and .509 respectively. The first four of these measured previous learning and the other, general intelligence.

Miss Martin's study revealed low correlations between all criteria and superintendents' ratings after the students had been out in the teaching field for one year. This is largely accounted for by the fact that the superintendents rated only a select group because only 123 teachers emerged from a starting class of 228. Likewise, each superintendent rated only one or two teachers at the most, and each teacher was rated by only one judge. For a rating scale to have validity the same person should rate a large number of persons in a series, and the concensus of opinion of a number of judges should be secured.

The following conclusions may be reached from this study: (1) the elements included in the entrance requirements may be selected and weighed on a more scientific basis

if the factors of success are known, (2) the factors most closely related to success may be used as a basis for selective elimination, and (3) methods of guidance toward success are influenced by a knowledge of the factors of success.

Study by Francis F. Smith. At Fresno State College in California, Smith conducted research over previous records in the estimation of college success.[2] The best part of this article is his justification of the previous high school record as an instrument in prediction. As Smith says in the article:

> Since a high-school graduate usually enters college with sixteen units of credit; since the grade received in each unit is likely to be based upon, perhaps, five examinations in the subject represented by that unit; and since each unit represents at least one high school subject taught by a different instructor in most cases, we have a composite judgment based upon about eighty examinations, evaluated by about sixteen instructors at different times and under different circumstances.[3]

This seems to give us a concensus of opinion which strengthens the validity of the rating of high-school students. The author points out that it is good sense to use the high-school record along with other measures of

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[2] Francis F. Smith, "The Use of Previous Record in Estimating College Success," Journal of Educational Psychology, 36:167-76, March, 1945.

[3] Ibid., p. 168.

student capacity. It is much too risky to advise a student on the basis of a single measure.

From this study the following conclusions can be drawn:

1. The high-school record, when reduced to a single summary score, is as useful in estimating future scholastic success in college as aptitude percentiles, objective English examination percentiles, or reading percentiles.

2. As might be expected, it seems safer to depend upon several factors in estimating future scholastic success than to depend upon a single factor such as IQ or college aptitude percentiles.

3. Of those studied the best single indicator of scholastic success in any given semester is the previous semester's record.

4. Errors of prediction of scholastic success are still fairly high. Correlations in the low .60's are gratifyingly useful, but low enough to remind us that in attempting to predict human behavior we are still dealing in probabilities rather than fixed laws.

Study by Ralph F. Berdie. In a survey of 154 engineering students at the University of Minnesota, Berdie concluded that previous school achievement most

accurately predicts college grades.[4] On the other hand, the scores on interest and personality tests are the least accurate in the prediction of college grades.

This study was conducted to secure the reliability of prediction with both achievement and curriculum satisfaction. The only significant correlation recorded was .56, the correlation between high-school percentile rank and honor-point ratio or grades. The Psychological Examination of the American Council on Education showed a correlation of only .21 with honor-point ratio. Only the high-school percentile rank bore a significant relationship to curriculum satisfaction. Of the tests for high-school content or subject information the scores on the mathematics examination were the only ones that provided a fairly high correlation with grades--.45.

Studies by C. W. Odell. In 1927 and again in 1930 Odell of the Bureau of Research of the University of Illinois conducted two important surveys on the prediction of college success. Individuals from several hundred different high schools in the state of Illinois upon entrance to the university served as the subjects of these surveys.

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[4] Ralph F. Berdie, "The Prediction of College Achievement and Satisfaction," Journal of Applied Psychology, 28:239-45, June, 1944.

In the survey of 1927[5] the author has this to say concerning the value of intelligence tests in attempting to predict the scholastic success of college students:

> If one of the best tests is employed, the correlations with freshman marks will probably be higher than those of the high school average. A combination of test score and high school mark may be expected to yield correlations of about .60 or higher.[6]

Odell presents also some very definite conclusions on the use of intelligence tests or scores on psychological examinations. New students who will probably fail in two or more subjects in either semester during their first year in college are far more likely--roughly speaking, ten to twenty times more likely--to be found among those who make low psychological scores than among those who make high scores. He goes on to say, "A freshman whose psychological score places him in the lowest decile has only two chances out of five of remaining more than one year in college and only one chance out of five of graduating."[7]

The three criteria used in this study--high school rank, high school content, and psychological rating--were

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[5] C. W. Odell, "Predicting the Scholastic Success of College Freshmen," Bulletin Number 37 (University of Illinois Bulletins, Vol. 25, no. 2. Urbana: University of Illinois, September 13, 1927), 54 pp.

[6] Ibid., p. 21.

[7] Ibid., p. 13.

thought by the investigator in the Illinois study to be expected to range from about .40 to .50 in correlation with college marks. Other conclusions were that combinations of these three predicative factors will often yield correlations of .60 or above and that if measures of study and other relevant habits are included, this figure could be raised appreciably.[8]

In the 1930 study Odell, in speaking of the predictive value of the high-school rank or standing, states:

> It appears that students with high school averages of ninety or better averaged about twice as long in college attendance as did those with similar averages below eighty. Furthermore, the chance of a student with a high school average above ninety being dropped from college was only about one-tenth as great as that of a student whose high school average was below eighty.[9]

From these two studies we see that scores on psychological examinations and high school rank are two important predictors of college success.

Pennsylvania study. This research was conducted among the high school seniors of 1934 of the state of

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[8] Ibid., p. 52.

[9] C. W. Odell, "Predicting the Success of College Students," Bulletin Number 52, (University of Illinois Bulletins, Vol. 28, No. 5. Urbana: University of Illinois, September 30, 1930), p. 32.

Pennsylvania under the auspices of the Carnegie Foundation for the Advancement of Teaching. In this rather comprehensive study the problem of the prediction of college success was touched upon only briefly. In regard to the prediction problem, the authors comment:

> Theoretically, it is the able student who should benefit from funds set apart by endowment or through taxation for higher education. This may not always be feasible. But it will greatly clarify both the problem and the policies to know who the able students are.[10]

Study by Archer Willis Hurd. As a result of tests conducted at the Medical College of Virginia, Hurd states, as his thesis in this study, that to increase predictive power colleges should use tests which "test the same abilities as the abilities being predicted."[11] Predictive tests should be of the same type and in the same field as the achievement which is being predicted. The study goes on to report that correlations between test scores and achievement records have been only moderately high. Even multiple correlations utilizing whole batteries of tests have been only what one might term as substantial. Few

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[10] W. S. Learned and Ben D. Wood, "The Student and His Knowledge," Bulletin Number 29, The Carnegie Foundation for the Advancement of Teaching, (New York: The Carnegie Foundation for the Advancement of Teaching, 1938), p. 61.

[11] Archer Willis Hurd, "The Problem of the Prediction of College Success," Journal of Educational Research, 38:217, November, 1944.

coefficients of .70 or more have been reported.[12]

Other studies. In a study conducted by Daniel D. Feder and Donald R. Mallett the following conclusions are of importance: (1) the value of personality scales in predicting individual achievement is negligible; (2) if a student is suffering from a marked personality deviation, it might be expected to result in a concomitant divergence in the achievement of the individual from his predicted level; and (3) a student's personality breakdown is almost invariably accompanied by marked deviations of the individual's level of achievement from what was predicted for him in terms of the scholastic aptitude examinations. This deviation may be positive, above expectancy, or negative, below expectancy.[13]

In a study conducted by Sylvester B. Schmitz in 1936 on the problem of the prediction of college success, a battery of five different tests designed to measure students in various ways was studied with high-school records and the scholastic success of the students during

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[12] Ibid., p. 219.

[13] Daniel D. Feder and Donald R. Mallett, "Validity of Certain Measures of Personality and Adjustment," Journal of American Association of Collegiate Registrars, 13:5-15, October, 1937.

the first semester and the first year. Two methods of evaluating each test were used: namely, the coefficient of correlation and the quadrant scheme. Both methods indicated that the high-school scholastic quotient was the best single instrument for predicting success.[14]

Summary of other investigations. In summing up the ten studies by other investigators on the problem of the prediction of college success reviewed in this thesis the following pertinent facts stand out: (1) In the prediction of college success the element of human behavior and its influence on prediction makes the problem one in which we are dealing with probabilities rather than fixed laws; (2) there is little or no value for prediction purposes in the results of personality inventory questionnaires; (3) of the factors that are known at college entrance the high-school standing or rank seems to be the one that can be used best for prediction purposes, and (4) the most desirable basis on which to draw up the prediction is that of a combination of the measures of high-school achievement and college intelligence which are known at

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[14] Sylvester B. Schmitz, "Predicting Success in College: A Study of Various Criteria," Journal of Educational Psychology, 28:465, June, 1937.

the time of entrance.

CHAPTER III

ANALYSIS OF THE DATA

Although the problem of the prediction of college success has been studied a number of times, the writer knows of no other study on the subject that has been done at Indiana State Teachers College. The information available on the incoming freshmen at this institution was analyzed to determine just what the administrators of the college can look for to estimate success in college as measured at the end of the first quarter and at the end of one year. It is believed by the writer that this knowledge can be used to good advantage by the guidance and counseling department of the afore-mentioned institution of higher learning and by high-school principals in advising students as to their probable success in college.

I. MATERIALS USED AND GROUPS STUDIED

Materials used. All students entering Indiana State Teachers College in the fall are required to attend a program of activities prior to the formal opening of school known as "freshman orientation week." During this week the incoming freshmen are given advice, guidance, and a general outline of college activity. In short, this week

serves as an introductory period in which the student becomes acquainted with the college and the college with the student. Also during this period the freshmen are given several tests designed to measure their abilities, capacities, and previous preparation. The results of these measurements made during the orientation week are used by the college administrators to give them an insight into the abilities of the new students.

Five criteria were chosen on which to judge the groups in this study. They were (1) native intelligence and psychological adjustment, (2) general knowledge, (3) past record of achievement, (4) achievement at Indiana State Teachers College at the end of the first quarter, and (5) cumulative achievement at Indiana State Teachers College at the end of the third quarter. These criteria were chosen because they gave the best academic picture of the individual.

The above requirements are met by Indiana State in the following manner: (1) Native intelligence is measured by the American Council on Education Psychological Examination. Every freshman is required to take this examination during his first year. Most of them take it during orientation week. The validity and reliability of this

examination have been long established.[1] (2) General knowledge is measured by the Iowa High School Content Examination. The purpose of this test is to secure an estimate of the scholastic background that an entering student possesses as a result of his high school courses in English, science, mathematics, and history. (3) The past record of achievement of each student is measured by his rank or standing in his own particular high school graduating class. (4) Achievement at the end of the first quarter is measured by using the scholarship index. And (5) Achievement at the end of the third quarter is measured by using the third quarter cumulative scholarship index.

Selection of groups. The freshman class which entered Indiana State Teachers College at the beginning of the Fall Quarter, 1946, was chosen as the subject of this study. This particular class was chosen for two reasons: (1) it was the most recent group on which the investigator could procure the required data, and (2) it was the first freshman class to have the full benefit of the services of the newly established Student Personnel Services

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[1] L. L. Thurston and Thelma Gwinn Thurston, Psychological Examinations for College Freshmen, 1944 Norms, (American Council on Education Studies, Vol. 9, No. 9, Series V. Washington, D. C.: Council of Staff Regents; May, 1945).

Division of the college.

The freshman class of the Fall Quarter, 1946, was carefully analyzed. The Director of Research of Indiana State Teachers College prepared mimeographed lists with the information derived from scores on tests taken during orientation week. These lists contained the information to meet two of the basic criteria, the scores on the psychological examination and the high school content examination expressed in percentile ranks. After scrutiny, it was found that 1165 entering freshmen were listed in this bulletin.

The next step in the procedure was to analyze the records of the registrar of the college for information concerning high-school rank. On the application blank of the college there is a space which should be filled out by the principal of the student's high school, giving the exact numerical rank of the student in his graduating class. About 60 per cent of the records contained these data. The records of the college were checked also to procure the scholarship index at the end of the first quarter. The information gathered from these sources completed the information necessary for the fulfillment of the requirements of the criteria necessary for the first-quarter group.

In the final selection of cases for the investigation 565 of the original 1165 were eliminated. In a large majority of the cases the elimination was caused by lack of information concerning the exact numerical rank in the high-school graduating class. In a few instances a student was eliminated from the study because there was no record of his score on either the psychological examination or the high-school content examination. There were also some withdrawals before the end of the first quarter so that no scholarship index was recorded. When the total number of cases was tabulated, there were 600 students on whom the college had the required information on four variables; that is, the score on the psychological examination, the score on the high-school content examination, the high-school rank, and the first-quarter scholarship index at Indiana State Teachers College.

The 600 cases that were used for the first part of the study were used as the basic group. When the data were reexamined, adding the fifth variable, cumulative scholarship index for three quarters, 107 of the original 600 were eliminated. In the second part of the study, then, the total number of cases to be treated was 493. In other words, 107 students dropped out of college for various reasons between the end of the first quarter and the end of the third quarter. One factor accounting for

a goodly share of the withdrawals was failure to meet the scholastic standard set up for the end of the second quarter, a scholarship index of twenty-five. Another was the requirement that a student who fails in two courses or in one-half of his approved schedule in any given term shall be discontinued unless re-admitted on probation.[2] These two factors would account for some of those who dropped out of college. Other reasons might be marriage, financial difficulties, or withdrawals to enter another college. The scholarship indexes of these 493 cases were obtained by consulting the records of the college in the registrar's office.

II. TREATMENT OF THE DATA

Conversion to percentile rank. In the treatment of the data it was thought to be desirable to change all data into terms of percentile rank. Each student's high-school rank, for instance, is expressed on the application blank for entrance to Indiana State in terms of his standing in his own high-school class. The following formula was used for converting the high-school rank into a percentile:

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[2] Curriculums for 1947-48, Catalog Issue, op. cit., p. 170.

$$100 - \frac{100(R-1)}{N-1} = \text{percentile rank}$$

The scholarship index for the first quarter was also converted into a percentile rank by means of a conversion table. (See Appendix, Table II, p. 40) The same procedure was followed in respect to the scholarship index for the third quarter. (See Appendix, Table III, p. 56)

The scores on the American Council on Education Psychological Examination and the Iowa High School Content Examination were originally expressed in percentile ranks. With the conversion of the high-school ranks and the indexes for the first and third quarters into percentile ranks, all data were expressed in like terms and were ready to be treated statistically.

First-quarter group. The data for the first-quarter group were subjected to statistical treatment in order to determine the coefficients of correlation existing between the various criteria of this group. To arrive at these coefficients the Pearson Product-Moment formula was employed. Individual scatter diagrams were set up to facilitate computations. There were twenty-one intervals of five points each with a total range from -2 to 102.

To provide as complete information as needed for the determination of the value of the predictive factors when compared with achievement at the end of the first quarter, the following coefficients of correlation were evaluated: (1) the high-school rank and the scholarship index at the end of the first quarter; (2) the score on the high-school content examination and the scholarship index at the end of the first quarter; (3) the score on the American Council on Education Psychological Examination and the scholarship index at the end of the first quarter; (4) an average percentile rank of the scores on the high-school content examination and the scores on the American Council Examination with the scholarship index at the end of the first quarter; (5) an average percentile rank of the high-school rank and the scores on the psychological examination with the scholarship index at the end of the first quarter; and (6) an average percentile rank derived by combining the high-school rank, the high-school content score, and the psychological-examination score with the scholarship index at the end of the first quarter.

Third quarter group. The same procedure was followed for the statistical treatment of the cases comprising the third-quarter group. On this group the following coefficients were determined: (1) the high-

school rank with the scholarship index at the end of the third quarter; (2) the high-school content with the scholarship index at the end of the third quarter; (3) the psychological examination with the scholarship index at the end of the third quarter; (4) an average percentile of the high-school rank and psychological examination with the scholarship index at the end of the third quarter; (5) an average percentile of the high-school content and the psychological examination with the scholarship index at the end of the third quarter; (6) the scholarship index at the end of the first quarter with the scholarship index at the end of the third quarter; (7) an average of the high-school rank, the high-school content, and the psychological examination with the scholarship index at the end of the third quarter; and (8) an average percentile of the high-school rank, the high-school content, the psychological examination, and the scholarship index at the end of the first quarter with the scholarship index at the end of the third quarter.

III. RESULTS

First-quarter group. This group contained 600 cases. Six coefficients of correlation were computed from the data obtained on this number. The first of these,

the correlation of the high-school rank with the scholarship index at the end of the first quarter, showed a fairly high value of .515 with a probable error of ± .02.

Another important relationship desired was that between the high-school content and the scholarship index at the end of the first quarter. The percentile rank used for the high-school content is a total centile obtained from the scores made on English, mathematics, science, and history. The correlation shown between the high-school content and the achievement at the end of the first quarter as measured by the scholarship index was .453 with a probable error of ± .02.

The American Council on Education Psychological Examination presented a correlation of .476 with a probable error of ± .02 with the scholarship index at the end of the first quarter. Both the high-school content examination and the psychological examination provided disappointingly low correlations with the first-quarter achievement measure.

As it was pointed out in Chapter II, several other investigators on the problem of the prediction of college success believe that combinations of the basic criteria should be made in order to increase the reliability of the prediction. When the combined percentile rank of the high-

school content examination and the American Council Test was used, a correlation of .497 with a probable error of ± .03 resulted. The combination of the high-school rank and the American Council Examination brought a marked increase with a value of .598 with a probable error of ± .02 when corelated with the scholarship index. The final comparison was made between the average percentile of the high-school rank, the high-school content, and the American Council on Education Examination with the scholarship index at the end of the first quarter. A positive correlation of .573 with a probable error of ± .01 resulted. High-school rank and high-school content were not combined because the two factors so closely approximate the same quality to be measured.

Third-quarter group. Out of the 600 cases that comprised the group to which statistical treatment was given at the end of the first quarter, 493 remained in college until the end of the third quarter. From the data on these 493 cases, eight correlations were computed. The first of these, the high-school rank with the scholarship index at the end of the third quarter, showed a relationship of .549 with a probable error of ± .02. This correlation was slightly higher than the corresponding one

with first-quarter index, a correlation of .515, but the increase in value is not enough to be really significant.

The second comparison was made between the high-school content and the third-quarter index. A value of .480 with a probable error of ± .02 resulted from this comparison. This also shows a slight increase over the correlation with the high-school content and the first-quarter index.

Correlating the psychological examination of the American Council on Education and the third-quarter index, the investigator found a value of .507 with a probable error of ± .02. This value is also slightly higher than the .476 of the corresponding correlation in the first-quarter group.

The combination of high-school rank and the psychological examination with the third-quarter scholarship index brought a correlation of .627. A scatter diagram or scattergram of this correlation has been presented (Figure 1, p. 30) to provide an example of the method used to compile the data necessary for the computation of the Pearson Product-Moment Formula. High-school content and the American Council Examination combined resulted in a correlation of .525 with a probable error of ± .02 when compared to the third-quarter index.

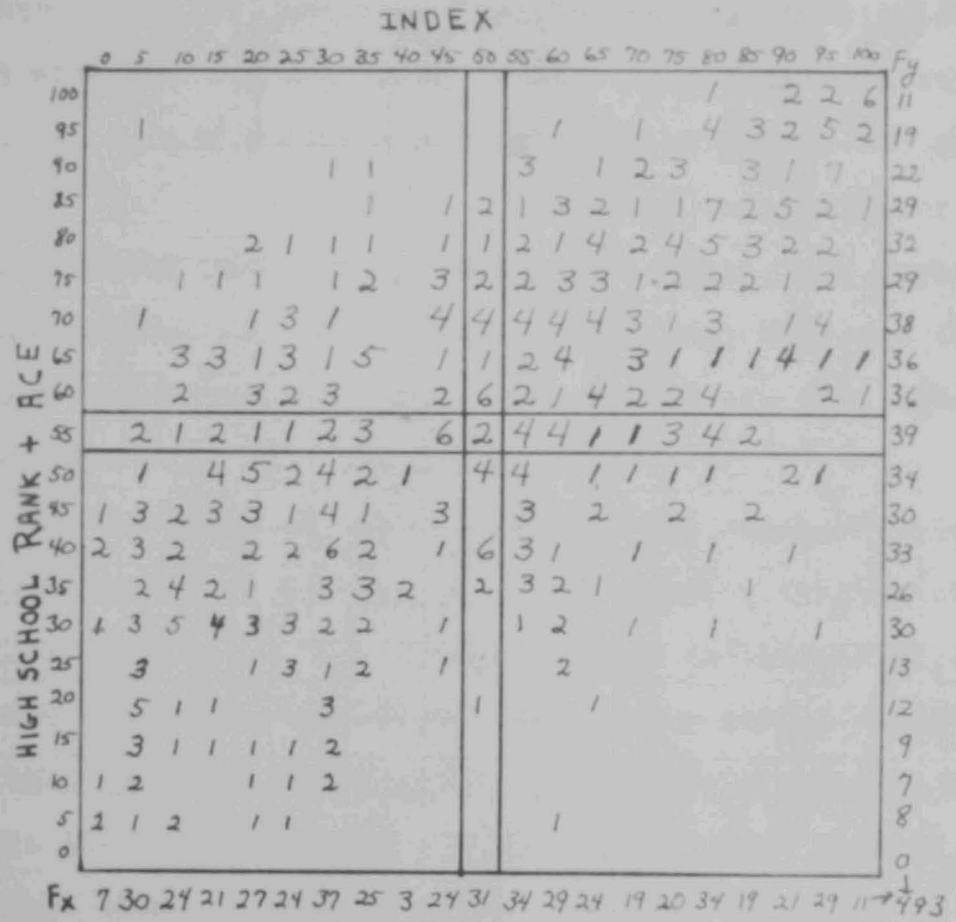

FIGURE 1

SCATTERGRAM FOR CORRELATION
OF
HIGH SCHOOL RANK (1) AND
A C E EXAMINATION (3) (COMBINED)
AND THIRD QUARTER INDEX (5)

$r_{(1+3)5} = .627$

An average percentile of the high-school rank, the high-school content, and the psychological examination correlated with the third-quarter index with a fairly substantial value of .625 with a probable error of ± .02.

The correlation of the average percentile of the high-school rank, the high-school content, the psychological examination, and the first-quarter index with the third-quarter index--.761 with a probable error of ± .01--may be regarded as highly significant.

For the purpose of checking the reliability of the grades given by the college, the index at the end of the first quarter was compared with that at the end of the third quarter. This correlation had the high value of .852 with a probable error of ± .01. The original data on which this study was based are to be found in the Appendix, Table III, pp. 40-55.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The investigation reported in this study was conducted for the purpose of determining which of the measurements available at the time of entrance at Indiana State Teachers College could best be used to predict college success. The groups were checked at the end of the first quarter and at the end of the third quarter or the first year. At the end of the first quarter there were 600 students on whom the investigator could assemble the required data. This number was reduced to 493 at the end of the third quarter. In this final chapter the findings of the investigation are summarized and conclusions are drawn from these results.

Summary of the findings. From the statistical treatment given the group of 600 cases that comprised the subject of the first part of the study, the following facts were drawn: (1) the highest correlation, with a value of .598, was that of the combined percentile of the high-school rank and the result of the American Council on Education Examination with the first-quarter index; (2) the lowest correlation of single percentiles was that of the high-school content with the first-quarter index with

a value of .453. The other correlations were .573--the correlation of the average percentile of high-school rank, high-school content, and the psychological examination with the first-quarter index--and .476--the correlation of the psychological examination with the first-quarter index.

The treatment given the group of 493 students that comprised the cases on which data were available for the third quarter disclosed the following information: (1) The highest correlation was that of the first-quarter index with the third-quarter index with a value of .852. This was the highest correlation existing between any two single variables. (2) The lowest relationship existing between two single criteria was that between the high-school content and the third-quarter index with a value of .480. (3) The highest correlation of a combined or average percentile was that of the high-school rank, the high-school content, the psychological examination, and the scholarship index at the end of the first quarter with the third-quarter index with a value of .761. And (4) the lowest correlation of an average percentile was that of the high-school content and the psychological examination with the third-quarter index with a value of .525. Other correlations were .627, .625, .549, and .507. These

values were for the correlations of the high-school rank and the psychological examination with the third-quarter index; the high-school rank, the high-school content, and the psychological examination with the third-quarter index; the high-school rank with the third-quarter index; and the psychological examination with the third-quarter index, respectively. Table I shows the correlations found by the investigator.

Conclusions. From the findings of this study, the following conclusions were derived:

1. The best single factor for prediction of college success is the high-school rank. The values of the correlations--.515 and .549--between the high-school rank and the scholarship index at the end of the first quarter and the high-school rank and the scholarship index at the end of the third-quarter are high enough to be regarded as significant. An individual's standing in his own high-school graduating class is of paramount importance to the college administrators who are charged with the guidance and direction of college students.

2. For practical purposes the best basis for prediction of college success at Indiana State Teachers College is one determined by the combination

TABLE I

SUMMARY OF CORRELATIONS

	4	5
1	.515	.549
2	.453	.480
3	.476	.507
4		.852
(1≠3)	.598	.627
(2≠3)	.497	.525
(1≠2≠3)	.573	.625
(1≠2≠3≠4)		.761

NOTE: Key to table: 1. High School Rank, 2. High School Content, 3. ACE Examination, 4. First Quarter Index, 5. Third Quarter Index.

of the high-school rank and the score on the American Council on Education Psychological Examination. This combination showed correlations of .598 and .627 with the scholarship indexes at the end of the first quarter and at the end of the third quarter, respectively. These values are relatively high and indicate that prediction based on this combination of criteria will be highly scientific.

3. A prediction based on a combination of the factors known at the time of admission is better than one derived from a single criterion.

4. A comparison of the accuracy of the prediction at entrance and at the end of the first quarter shows that there is much greater accuracy if predictions are based on criteria available at the end of the first quarter.

5. There is a high degree of reliability in the grades given at the end of the first quarter and those that comprise the scholarship index at the end of the third quarter.

Recommendations. After making this study, the investigator would like to make these recommendations: (1) High school administrators should be urged to furnish the information concerning high-school rank asked for on

the admission blank of Indiana State Teachers College. In many cases college administrators do not have this information. Of three criteria used by Indiana State to predict college success--the high-school rank, the high school content, and the psychological examination--the high-school rank is the only one that the college must depend upon the high school to furnish. (2) Special effort should be given to aiding freshmen in every way possible to make the best initial start in college. It is very important to a student that he make high first-quarter and first-year marks. There is a high correlation between what the student does in the first quarter and what he does in the remainder of his college life. Special help in the use of the library and other facilities of the college enables the students who have had fewer opportunities in high school to adjust more quickly to college life.

Having completed this study, the writer suggests these related problems for further research: (1) Could high-school and college marks be made more accurate representations of scholastic success and thereby result in higher correlations between high-school rank and scholarship index than were found in this study? (2) Is there a need for high-school and college marks to be in

greater agreement? Might high-school teachers and college teachers, working together, develop a grading system so reliable that the correlation between grades given to high-school seniors who attend college and the grades given in college would approximate the high correlation between the scholarship indexes of the first and the third quarters in college? (3) What correlations between the variables studied would result if the veterans in the freshman class were treated as a separate group? and (4) What were the reasons for the withdrawals before the end of the third quarter of 107 students of the group of 600 studied?

APPENDIX

TABLE II

BASIC DATA FOR 1946 FRESHMAN CLASS

Case Number	1	2	3	4	5
1.	36	30	66	25 (43.7)	21 (43.7)
2.	20	32	83	15 (37.5)	21 (43.7)
3.	40	72	70	86 (75.0)	84 (72.9)
4.	19	86	61	10 (33.3)	
5.	20	28	41	19 (41.2)	17 (40.6)
6.	49	66	66	25 (43.7)	49 (54.1)
7.	55	27	63	15 (37.5)	20 (43.3)
8.	100	38	76	78 (68.7)	71 (64.6)
9.	96	60	16	41 (50.0)	49 (54.1)
10.	94	49	85	68 (62.5)	75 (66.6)
11.	29	27	13	25 (43.7)	4 (27.0)
12.	89	50	77	78 (68.7)	
13.	67	73	91	78 (68.7)	
14.	46	21	15	41 (50.0)	45 (52.5)
15.	75	36	44	41 (50.0)	43 (52.5)
16.	44	8	3	3 (16.6)	5 (29.5)
17.	94	78	79	86 (75.0)	78 (68.7)
18.	40	43	25	68 (62.5)	50 (54.5)
19.	32	60	47	9 (31.1)	10 (36.3)
20	91	35	29	41 (50.0)	18 (41.6)
21.	90	79	69	68 (62.5)	43 (52.2)
22.	61	55	9	78 (68.7)	84 (72.9)
23.	39	61	73	15 (37.5)	5 (29.1)
24.	85	78	86	92 (81.2)	67 (62.5)
25.	11	9	16	41 (50.0)	20 (43.1)
26.	57	11	17	53 (56.2)	54 (56.8)
27.	80	63	35	68 (62.5)	67 (62.5)
28.	16	77	95	21 (41.7)	18 (41.6)
29.	51	90	92	53 (56.2)	
30.	63	54	40	68 (62.5)	
31.	43	72	84	98 (93.7)	91 (76.9)
32.	89	93	98	78 (68.7)	82 (70.8)
33.	28	24	12	9 (31.2)	12 (37.5)
34.	86	28	25	41 (50.0)	43 (52.2)
35.	6	57	8	15 (37.5)	24 (45.4)

NOTE: Key to table: 1--High School Rank, 2-- High School Content, 3--ACE Examination, 4--First Quarter Index, 5--Third Quarter Index. All figures are expressed in percentiles. Figures in parentheses in columns 4 and 5 indicate Indiana State Teachers College Index.

TABLE II (Continued)

BASIC DATA FOR 1946 FRESHMAN CLASS

Case Number	1	2	3	4	5
36.	38	92	83	41 (50.0)	50 (54.5)
37.	26	75	31	15 (37.5)	7 (33.3)
38.	50	28	9	25 (43.7)	
39.	44	40	29	15 (37.5)	16 (40.3)
40.	7	74	55	78 (68.7)	59 (59.0)
41.	77	34	73	41 (50.0)	46 (53.1)
42.	82	90	71	92 (81.2)	89 (75.0)
43.	69	90	89	68 (62.5)	
44.	12	22	0	3 (18.7)	
45.	77	61	55	25 (43.7)	37 (50.0)
46.	74	72	49	86 (75.0)	72 (65.0)
47.	95	89	88	98 (93.7)	
48.	18	59	38	78 (68.7)	78 (68.7)
49.	33	37	55	6 (25.0)	19 (42.5)
50.	84	30	10	74 (65.6)	83 (71.8)
51.	82	35	38	89 (78.1)	80 (69.7)
52.	67	62	85	68 (62.5)	37 (50.0)
53.	83	40	38	47 (53.1)	51 (55.2)
54.	87	51	49	68 (62.5)	67 (62.5)
55.	80	86	98	86 (75.0)	89 (75.0)
56.	46	23	20	15 (37.5)	10 (36.3)
57.	29	26	21	9 (31.2)	
58.	68	83	64	97 (87.5)	93 (79.1)
59.	68	89	33	92 (81.2)	95 (81.8)
60.	77	18	13	41 (50.0)	21 (43.7)
61.	87	56	51	53 (56.2)	59 (59.3)
62.	7	61	86	15 (37.5)	
63.	60	14	15	41 (50.0)	37 (50.0)
64.	48	36	6	9 (31.2)	
65.	13	48	6	10 (33.3)	7 (32.5)
66.	71	18	6	9 (31.2)	7 (32.5)
67.	4	13	3	3 (18.7)	
68.	39	29	36	25 (43.7)	49 (54.1)
69.	35	23	31	41 (50.0)	61 (60.4)
70.	66	96	95	78 (68.7)	82 (70.8)
71.	35	32	25	19 (40.6)	
72.	30	44	73	15 (37.5)	20 (43.1)
73.	3	6	5	9 (31.2)	2 (23.8)
74.	66	66	86	34 (46.8)	
75.	42	88	7	57 (58.3)	59 (59.0)

TABLE II (Continued)

BASIC DATA FOR 1946 FRESHMAN CLASS

Case Number	1	2	3	4	5
76.	88	68	41	68 (62.5)	49 (54.1)
77.	94	48	75	68 (62.5)	61 (61.3)
78.	45	60	58	41 (50.0)	16 (40.0)
79.	43	51	25	41 (50.0)	18 (41.6)
80.	44	23	29	41 (50.0)	40 (51.2)
81.	67	73	49	97 (87.5)	98 (86.5)
82.	84	72	86	41 (50.0)	43 (52.0)
83.	94	77	79	78 (68.7)	78 (68.7)
84.	34	49	43	68 (62.5)	61 (60.4)
85.	29	18	17	9 (31.2)	26 (45.8)
86.	82	42	31	86 (75.0)	78 (68.7)
87.	68	61	69	25 (43.7)	57 (58.3)
88.	30	78	1	10 (33.3)	8 (33.8)
89.	84	62	92	86 (75.0)	57 (58.3)
90.	92	46	25	41 (50.0)	26 (45.8)
91.	91	69	55	68 (62.5)	57 (58.3)
92.	63	53	87	53 (56.2)	
93.	37	45	19	3 (18.7)	9 (35.4)
94.	59	59	61	86 (75.0)	78 (68.7)
95.	1	79	69	41 (50.0)	
96.	50	72	60	86 (75.0)	80 (69.6)
97.	50	83	94	53 (56.2)	43 (52.0)
98.	14	42	26	25 (43.7)	7 (32.5)
99.	4	31	26	41 (50.0)	30 (47.9)
100.	35	55	41	53 (56.2)	
101.	56	60	75	53 (56.2)	37 (50.0)
102.	59	45	63	10 (33.0)	28 (46.6)
103.	82	72	38	41 (50.0)	78 (68.7)
104.	97	83	60	53 (56.2)	67 (62.5)
105.	95	26	6	25 (43.7)	30 (47.9)
106.	1	47	58	9 (31.2)	17 (40.9)
107.	97	57	85	68 (62.5)	57 (58.3)
108.	72	67	51	11 (34.3)	10 (35.9)
109.	63	78	81	68 (62.5)	43 (52.2)
110.	94	66	60	53 (56.2)	18 (41.6)
111.	99	79	89	89 (78.1)	90 (76.0)
112.	70	89	91	68 (62.5)	82 (70.8)
113.	97	86	88	97 (87.5)	98 (87.5)
114.	51	57	52	41 (50.0)	57 (58.3)
115.	95	63	49	25 (43.7)	

TABLE II (Continued)

BASIC DATA FOR 1946 FRESHMAN CLASS

Case Number	1	2	3	4	5
116.	75	72	75	86 (75.0)	82 (70.8)
117.	2	13	1	0 (.0)	
118.	50	78	75	53 (56.2)	
119.	20	44	4	0 (2.5)	0 (17.5)
120.	40	40	86	6 (25.0)	
121.	74	85	93	68 (62.5)	69 (63.6)
122.	79	59	35	86 (75.0)	71 (64.6)
123.	63	63	70	86 (75.0)	71 (64.6)
124.	22	25	31	19 (41.2)	37 (50.0)
125.	15	13	20	47 (52.7)	30 (47.9)
126.	13	49	36	25 (43.7)	24 (45.4)
127.	32	21	17	41 (50.0)	30 (47.9)
128.	77	67	49	75 (66.6)	
129.	96	86	88	78 (68.7)	96 (83.7)
130.	14	63	89	78 (68.7)	78 (68.7)
131.	56	32	17	25 (43.7)	37 (50.0)
132.	84	53	70	78 (68.7)	61 (60.4)
133.	98	84	99	92 (81.2)	95 (81.2)
134.	80	41	7	25 (43.7)	
135.	78	63	77	25 (43.7)	
136.	75	70	66	68 (62.5)	49 (54.1)
137.	87	75	89	41 (50.0)	53 (56.2)
138.	73	43	40	68 (62.5)	59 (59.0)
139.	15	37	13	15 (37.5)	30 (47.9)
140.	12	19	36	25 (43.7)	26 (45.5)
141.	90	71	55	53 (56.2)	75 (66.6)
142.	43	57	66	6 (25.0)	37 (50.0)
143.	34	56	51	15 (37.5)	8 (34.0)
144.	10	55	46	15 (37.5)	10 (36.3)
145.	63	60	63	25 (43.7)	43 (52.0)
146.	14	55	63	41 (50.0)	53 (56.2)
147.	36	54	4	41 (50.0)	30 (47.7)
148.	92	62	69	86 (75.0)	64 (61.1)
149.	80	84	93	53 (56.2)	61 (60.4)
150.	72	62	79	41 (50.0)	75 (66.6)
151.	69	46	79	6 (25.0)	
152.	95	29	84	98 (93.7)	
153.	59	13	1	53 (56.2)	21 (43.7)
154.	87	59	15	68 (62.5)	64 (61.4)
155.	78	56	67	25 (43.7)	17 (40.7)

TABLE II (Continued)

BASIC DATA FOR 1946 FRESHMAN CLASS

Case Number	1	2	3	4	5
156.	94	88	90	53 (56.2)	37 (50.0)
157.	92	41	88	86 (75.0)	93 (79.1)
158.	50	92	87	68 (62.5)	75 (66.6)
159.	39	45	20	15 (37.5)	5 (29.5)
160.	50	48	33	41 (50.0)	78 (68.7)
161.	41	18	28	15 (37.5)	37 (50.0)
162.	78	95	98	68 (62.5)	71 (64.6)
163.	50	13	13	53 (56.2)	61 (60.4)
164.	100	93	100	98 (93.7)	99 (93.7)
165.	62	38	52	41 (50.0)	
166.	47	78	33	41 (50.0)	43 (52.0)
167.	100	62	67	86 (75.0)	82 (71.0)
168.	100	46	51	86 (75.0)	82 (70.8)
169.	100	89	96	95 (84.3)	95 (81.0)
170.	86	36	27	25 (43.7)	26 (45.8)
171.	68	71	46	10 (33.3)	
172.	44	25	35	53 (56.2)	71 (64.6)
173.	11	44	3	10 (33.3)	
174.	53	66	75	0 (0.0)	
175.	95	72	63	9 (31.2)	
176.	100	63	35	41 (50.0)	5 (30.5)
177.	97	72	76	86 (75.0)	90 (76.0)
178.	47	68	69	41 (50.0)	75 (66.6)
179.	51	47	92	68 (62.5)	
180.	48	59	41	25 (43.7)	24 (45.0)
181.	38	45	49	41 (50.0)	43 (52.0)
182.	79	90	100	41 (50.0)	29 (47.2)
183.	36	53	44	15 (37.5)	25 (45.4)
184.	90	46	25	68 (62.5)	20 (43.1)
185.	32	71	75	9 (31.2)	
186.	81	73	61	15 (37.5)	26 (45.8)
187.	86	83	79	78 (68.7)	61 (60.4)
188.	94	82	85	68 (62.5)	73 (65.9)
189.	30	12	25	41 (50.0)	22 (44.4)
190.	100	45	71	68 (62.5)	84 (72.9)
191.	52	37	19	78 (68.7)	52 (55.5)
192.	97	38	9	53 (56.2)	
193.	100	78	81	89 (78.1)	95 (80.7)
194.	87	83	51	68 (62.5)	49 (54.1)
195.	70	95	85	41 (50.0)	29 (47.2)

TABLE II (Continued)

BASIC DATA FOR 1946 FRESHMAN CLASS

Case Number	1	2	3	4	5
196.	46	34	40	15 (37.5)	37 (50.0)
197.	81	84	76	15 (37.5)	27 (46.1)
198.	100	56	69	86 (75.0)	96 (83.0)
199.	83	66	76	53 (56.2)	71 (64.5)
200.	71	88	80	53 (56.2)	45 (52.5)
201.	71	36	23	41 (50.0)	30 (47.9)
202.	100	61	41	59 (59.3)	
203.	53	26	29	41 (50.0)	30 (47.9)
204.	51	78	83	68 (62.5)	78 (68.7)
205.	22	50	27	86 (75.0)	61 (60.4)
206.	64	25	16	6 (25.0)	
207.	46	49	43	19 (41.2)	16 (40.0)
208.	100	63	25	86 (75.0)	91 (77.0)
209.	67	78	61	53 (56.2)	70 (64.2)
210.	61	48	43	41 (50.0)	53 (56.2)
211.	88	89	85	78 (68.7)	89 (75.0)
212.	71	86	99	78 (68.7)	81 (70.0)
213.	59	91	85	92 (81.2)	96 (83.3)
214.	87	59	38	68 (62.5)	61 (60.4)
215.	99	90	90	78 (68.7)	84 (72.9)
216.	10	38	2	6 (25.0)	10 (36.3)
217.	20	89	31	15 (37.5)	
218.	7	50	15	25 (43.7)	30 (47.9)
219.	100	35	19	86 (75.0)	95 (81.2)
220.	32	44	28	53 (56.2)	71 (64.6)
221.	78	66	55	78 (68.7)	84 (72.9)
222.	50	72	36	9 (31.2)	13 (38.6)
223.	1	73	61	9 (31.2)	12 (37.5)
224.	57	77	85	41 (50.0)	43 (52.0)
225.	50	19	19	53 (56.2)	57 (58.3)
226.	24	32	17	6 (25.0)	
227.	87	58	41	68 (62.5)	59 (59.0)
228.	90	27	63	41 (50.0)	
229.	38	49	29	68 (62.5)	61 (60.4)
230.	46	84	71	41 (50.0)	
231.	92	26	3	68 (62.5)	
232.	96	63	61	25 (43.7)	20 (43.1)
233.	93	87	85	97 (87.5)	96 (83.3)
234.	50	79	89	57 (58.3)	81 (70.4)
235.	78	94	84	86 (75.0)	78 (68.7)

TABLE II (continued)

BASIC DATA FOR 1946 FRESHMAN CLASS

Case Number	1	2	3	4	5
236.	68	72	84	86 (75.0)	89 (75.0)
237.	52	37	44	2 (12.5)	
238.	70	86	93	53 (56.2)	59 (59.0)
239.	4	22	13	41 (50.0)	24 (45.4)
240.	43	19	15	23 (43.2)	37 (50.0)
241.	50	67	77	68 (62.5)	
242.	90	49	73	68 (62.5)	57 (58.3)
243.	71	89	99	25 (43.7)	49 (54.1)
244.	30	60	60	23 (42.7)	2 (21.8)
245.	81	88	87	23 (42.7)	
246.	39	39	7	3 (18.7)	3 (25.0)
247.	91	43	82	41 (50.0)	57 (58.3)
248.	61	7	3	19 (41.2)	22 (44.4)
249.	62	38	25	23 (42.7)	15 (39.5)
250.	45	69	52	53 (56.2)	51 (55.4)
251.	89	79	82	78 (68.7)	61 (60.4)
252.	60	36	15	9 (31.2)	21 (43.7)
253.	94	46	36	41 (50.0)	57 (57.5)
254.	92	75	41	41 (50.0)	53 (56.2)
255.	58	86	76	15 (37.5)	15 (39.5)
256.	64	48	33	15 (37.5)	30 (47.9)
257.	70	41	46	41 (50.0)	
258.	59	32	20	53 (56.2)	50 (54.5)
259.	2	15	8	86 (75.0)	59 (59.0)
260.	78	76	75	68 (62.5)	
261.	82	84	96	89 (77.7)	95 (81.3)
262.	74	63	69	68 (62.5)	61 (60.0)
263.	47	43	12	6 (25.0)	8 (34.3)
264.	53	74	77	53 (56.2)	75 (66.6)
265.	11	19	27	53 (56.2)	50 (54.5)
266.	34	34	36	3 (18.7)	
267.	31	72	69	41 (50.0)	24 (45.4)
268.	25	43	16	25 (43.7)	29 (47.2)
269.	88	72	51	53 (56.2)	31 (48.0)
270.	97	88	81	86 (75.0)	95 (81.8)
271.	90	51	41	15 (37.5)	49 (54.1)
272.	39	85	77	53 (56.2)	24 (45.4)
273.	7	34	2	9 (31.2)	4 (27.0)
274.	86	66	49	53 (56.2)	69 (63.6)
275.	78	23	21	41 (50.0)	20 (43.1)

TABLE II (continued)

BASIC DATA FOR 1946 FRESHMAN CLASS

Case Number	1	2	3	4	5
276.	80	70	84	68 (62.5)	57 (58.3)
277.	32	64	82	78 (68.7)	30 (47.9)
278.	86	16	23	78 (68.7)	75 (66.6)
279.	76	42	38	25 (43.7)	9 (35.0)
280.	63	36	15	9 (31.2)	5 (29.5)
281.	47	70	73	57 (58.3)	50 (54.5)
282.	58	61	79	86 (75.0)	
283.	80	90	66	68 (62.5)	59 (59.0)
284.	50	83	80	68 (62.5)	69 (63.6)
285.	86	57	11	86 (75.0)	57 (57.5)
286.	39	28	58	41 (50.0)	71 (64.6)
287.	39	16	15	25 (43.7)	37 (50.0)
288.	84	74	52	25 (43.7)	49 (54.1)
289.	85	54	52	41 (50.0)	82 (70.8)
290.	13	12	5	25 (43.7)	6 (31.8)
291.	100	93	97	94 (83.3)	
292.	56	88	84	53 (56.2)	49 (54.1)
293.	39	62	52	86 (75.0)	77 (67.7)
294.	88	58	63	41 (50.0)	
295.	49	74	96	55 (57.1)	30 (47.6)
296.	55	84	91	19 (41.2)	37 (50.0)
297.	76	27	17	9 (31.2)	29 (47.4)
298.	78	70	44	86 (75.0)	67 (62.5)
299.	36	6	7	3 (18.7)	
300.	86	40	43	6 (25.0)	12 (37.5)
301.	48	63	64	41 (50.0)	46 (53.0)
302.	54	58	71	86 (75.0)	91 (77.0)
303.	73	35	8	15 (37.5)	30 (47.9)
304.	71	31	63	68 (62.5)	61 (60.4)
305.	34	26	36	15 (37.5)	12 (37.5)
306.	77	15	13	25 (43.7)	
307.	59	43	31	86 (75.0)	84 (72.9)
308.	59	42	36	25 (43.7)	30 (47.9)
309.	97	64	63	68 (62.5)	87 (74.0)
310.	50	45	36	68 (62.5)	54 (56.8)
311.	98	96	100	100 (100.0)	99 (92.1)
312.	44	18	12	1 (6.2)	
313.	90	48	58	41 (50.0)	12 (37.5)
314.	65	84	89	86 (75.0)	95 (81.2)
315.	35	60	36	53 (56.2)	40 (51.0)

TABLE II (continued)

BASIC DATA FOR 1946 FRESHMAN CLASS

Case Number	1	2	3	4	5
316.	2	16	6	3 (16.6)	1 (19.4)
317.	39	60	58	19 (41.2)	30 (47.5)
318.	11	46	2	15 (37.5)	18 (41.6)
319.	80	48	28	53 (56.2)	
320.	53	67	67	41 (50.0)	47 (53.4)
321.	40	23	35	53 (56.2)	30 (47.9)
322.	40	35	44	15 (37.5)	20 (43.4)
323.	97	76	70	78 (68.7)	
324.	21	55	13	15 (37.5)	5 (30.0)
325.	52	42	15	15 (37.5)	28 (46.9)
326.	82	66	93	68 (62.5)	87 (74.0)
327.	87	44	69	86 (75.0)	84 (72.9)
328.	84	54	20	57 (58.3)	50 (54.5)
329.	71	49	35	41 (50.0)	75 (66.6)
330.	96	88	89	86 (75.0)	89 (75.0)
331.	40	40	85	41 (50.0)	30 (47.5)
332.	50	76	64	53 (56.2)	43 (52.0)
333.	80	42	32	41 (50.0)	43 (52.2)
334.	59	22	95	68 (62.5)	84 (72.9)
335.	10	18	11	53 (56.2)	20 (43.1)
336.	70	17	9	6 (25.0)	2 (22.2)
337.	34	80	91	25 (43.7)	16 (40.3)
338.	20	16	16	15 (37.5)	6 (31.2)
339.	36	44	12	25 (43.7)	20 (43.1)
340.	60	74	52	9 (31.2)	13 (38.6)
341.	98	78	75	86 (75.0)	81 (70.0)
342.	18	72	46	78 (68.7)	53 (56.2)
343.	98	75	66	78 (68.7)	93 (79.1)
344.	61	70	66	41 (50.0)	37 (50.0)
345.	84	34	21	68 (62.5)	78 (68.7)
346.	75	77	31	41 (50.0)	
347.	51	66	86	68 (62.5)	69 (63.6)
348.	69	83	70	41 (50.0)	54 (56.8)
349.	60	18	6	15 (37.5(	13 (38.6)
350.	49	65	40	41 (50.0)	53 (56.2)
351.	80	82	4	25 (43.7)	
352.	45	54	16	25 (43.7)	24 (45.0)
353.	26	17	17	68 (62.5)	
354.	79	53	55	68 (62.5)	59 (59.0)
355.	77	34	27	41 (50.0)	54 (56.8)

TABLE II (continued)

BASIC DATA FOR 1946 FRESHMAN CLASS

Case Number	1	2	3	4	5
356.	100	88	93	86 (75.0)	78 (68.7)
357.	95	55	49	98 (93.7)	97 (85.4)
358.	25	10	13	3 (18.7)	
359.	73	5	2	6 (25.0)	
360.	96	93	94	92 (81.2)	84 (72.9)
361.	83	40	29	41 (50.0)	57 (58.3)
362.	92	92	99	63 (61.1)	
363.	14	58	55	19 (40.6)	6 (31.2)
364.	92	37	2	77 (67.9)	74 (66.3)
365.	62	49	35	9 (31.2)	13 (38.6)
366.	91	66	63	68 (62.5)	85(73.2)
367.	48	63	84	25 (43.7)	17 (40.9)
368.	37	23	3	1 (6.2)	
369.	76	31	10	68 (62.5)	43 (52.0)
370.	23	29	8	41 (50.0)	24 (45.0)
371.	89	68	96	53 (56.2)	61 (60.4)
372.	51	27	49	15 (37.5)	
373.	56	61	73	41 (50.0)	26 (45.8)
374.	100	21	33	97 (87.5)	98 (86.3)
375.	89	42	61	68 (62.5)	61 (60.0)
376.	82	59	58	41 (50.0)	
377.	46	78	96	41 (50.0)	20 (43.1)
378.	79	63	83	78 (68.7)	89 (75.0)
379.	78	66	64	97 (87.5)	97 (85.4)
380.	80	31	32	53 (56.2)	73 (65.9)
381.	39	39	64	15 (37.5)	20 (43.1)
382.	23	32	7	3 (16.6)	
383.	100	98	98	97 (87.5)	99 (93.7)
384.	3	25	5	9 (31.2)	
385.	93	23	21	78 (68.7)	78 (68.7)
386.	100	45	61	59 (59.3)	80 (69.7)
387.	39	74	77	19 (41.2)	
388.	73	47	38	41 (50.0)	37 (50.0)
389.	73	91	95	86 (75.0)	93 (79.1)
390.	100	50	46	41 (50.0)	64 (61.1)
391.	92	60	80	100 (100.0)	98 (87.5)
392.	75	58	84	86 (75.0)	
393.	54	14	17	3 (18.7)	
394.	92	32	40	10 (33.3)	12 (37.5)
395.	93	85	94	86 (75.0)	82 (70.8)

TABLE II (Continued)

BASIC DATA FOR 1946 FRESHMAN CLASS

Case Number	1	2	3	4	5
396.	14	56	88	25 (43.7)	13 (38.6)
397.	20	81	91	41 (50.0)	37 (50.0)
398.	89	91	69	86 (75.0)	73 (65.9)
399.	71	55	41	41 (50.0)	57 (58.3)
400.	27	83	84	68 (62.5)	43 (52.2)
401.	100	67	93	86 (75.0)	96 (83.3)
402.	78	13	36	41 (50.0)	45 (52.5)
403.	58	79	71	92 (81.2)	89 (75.0)
404.	73	87	75	57 (58.3)	64 (61.1)
405.	88	72	55	53 (56.2)	97 (85.4)
406.	17	51	75	53 (56.2)	67 (62.5)
407.	46	73	84	25 (43.7)	18 (41.6)
408.	48	50	40	53 (56.2)	30 (47.9)
409.	95	63	61	86 (75.0)	84 (72.7)
410.	39	12	29	15 (37.5)	12 (32.5)
411.	91	87	97	98 (93.7)	99 (91.6)
412.	65	66	58	41 (50.0)	53 (56.2)
413.	34	30	21	21 (41.6)	17 (40.6)
414.	94	5	1	8 (29.0)	3 (25.0)
415.	60	62	86	74 (65.6)	65 (61.5)
416.	29	78	49	41 (50.0)	49 (54.1)
417.	85	26	21	53 (56.2)	
418.	5	53	43	1 (8.3)	
419.	23	46	21	19 (41.2)	7 (32.5)
420.	85	87	95	92 (81.2)	95 (81.2)
421.	63	77	63	41 (50.0)	37 (50.0)
422.	60	56	58	25 (43.7)	30 (47.9)
423.	61	48	40	41 (50.0)	
424.	47	71	35	25 (43.7)	49 (54.1)
425.	66	83	90	57 (58.3)	73 (65.9)
426.	96	38	75	68 (62.5)	82. (70.8)
427.	75	92	80	68 (62.5)	67 (62.5)
428.	62	73	75	41 (50.0)	
429.	13	34	33	53 (56.2)	43 (52.2)
430.	71	69	71	53 (56.2)	27 (46.1)
431.	93	89	93	92 (81.2)	82 (70.8)
432.	44	96	99	97 (87.5)	97 (85.4)
433.	30	61	47	53 (56.2)	26 (45.8)
434.	91	93	100	92 (81.2)	96 (83.3)
435.	25	83	81	41 (50.0)	53 (56.2)

TABLE II (Continued)

BASIC DATA FOR 1946 FRESHMAN CLASS

Case Number	1	2	3	4	5
436.	77	23	25	68 (62.5)	75 (66.6)
437.	80	79	83	41 (50.0)	37 (50.0)
438.	57	8	2	55 (56.8)	5 (28.4)
439.	53	83	79	68 (62.5)	
440.	88	45	51	86 (75.0)	59 (59.0)
441.	4	23	28	3 (16.7)	
442.	84	64	69	53 (56.2)	49 (54.1)
443.	98	95	95	92 (81.2)	94 (79.5)
444.	91	23	5	15 (37.5)	15 (39.5)
445.	86	78	73	86 (75.0)	93 (79.1)
446.	47	73	60	68 (62.5)	61 (60.4)
447.	100	96	100	100 (100.0)	100 (97.9)
448.	56	47	31	78 (68.7)	
449.	50	36	29	41 (50.0)	52 (55.5)
450.	100	77	61	89 (78.1)	90 (76.0)
451.	75	73	92	53 (56.2)	
452.	99	91	99	100 (100.0)	100 (98.0)
453.	81	51	33	53 (56.2)	53 (56.2)
454.	94	71	64	86 (75.0)	67 (62.5)
455.	35	47	60	63 (60.7)	51 (55.4)
456.	94	53	19	10 (33.3)	5 (30.5)
457.	9	41	58	10 (33.3)	6 (31.2)
458.	57	40	67	23 (43.2)	9 (35.0)
459.	1	19	20	41 (50.0)	
460.	59	38	47	23 (43.2)	49 (54.1)
461.	100	81	80	53 (55.5)	87 (74.0)
462.	87	80	87	92 (81.2)	84 (72.9)
463.	64	70	77	68 (62.5)	67 (62.5)
464.	96	60	89	78 (68.7)	84 (72.9)
465.	54	43	70	78 (68.7)	77 (68.1)
466.	67	23	7	25 (43.7)	37 (50.0)
467.	8	34	31	18 (40.0)	17 (40.9)
468.	11	0	3	6 (25.0)	
469.	59	32	51	21 (42.3)	30 (47.9)
470.	66	35	9	78 (68.7)	50 (54.5)
471.	89	38	35	94 (83.3)	67 (62.5)
472.	15	78	70	41 (50.0)	21 (43.7)
473.	64	67	61	41 (50.0)	24 (45.4)
474.	99	68	71	92 (81.2)	89 (75.0)
475.	86	54	58	53 (56.2)	53 (56.2)

TABLE II (Continued)

BASIC DATA FOR 1946 FRESHMAN CLASS

Case Number	1	2	3	4	5
476.	1	21	21	41 (50.0)	30 (47.7)
477.	62	13	17	21 (41.6)	2 (22.2)
478.	18	38	17	92 (81.2)	67 (62.5)
479.	95	84	75	78 (68.7)	
480.	56	49	27	41 (50.0)	29 (47.2)
481.	79	79	61	53 (56.2)	61 (60.0)
482.	55	54	47	25 (43.7)	40 (51.3)
483.	94	76	93	25 (43.7)	7 (32.5)
484.	89	92	100	41 (50.0)	
485.	61	10	10	78 (68.7)	65 (61.5)
486.	85	70	89	83 (72.2)	80 (69.6)
487.	62	66	47	41 (50.0)	61 (60.4)
488.	31	50	61	25 (43.7)	30 (47.5)
489.	45	65	25	10 (33.3)	29 (47.2)
490.	44	28	35	41 (50.0)	30 (47.7)
491.	14	60	23	25 (43.7)	
492.	65	27	23	53 (56.2)	64 (61.3)
493.	45	22	10	10 (33.3)	
494.	59	22	15	21 (41.6)	
495.	89	63	51	68 (62.5)	79 (69.4)
496.	59	45	19	10 (33.3)	
497.	56	25	10	15 (37.5)	
498.	23	44	6	41 (50.0)	5 (29.5)
499.	80	59	73	25 (43.7)	
500.	19	18	10	19 (41.2)	13 (38.8)
501.	6	48	25	6 (25.0)	
502.	8	17	33	53 (56.2)	
503.	90	89	92	86 (75.0)	84 (72.7)
504.	83	50	58	53 (56.2)	67 (62.5)
505.	52	42	44	41 (50.0)	26 (45.8)
506.	34	21	51	57 (58.3)	5 (29.5)
507.	1	20	4	10 (33.3)	
508.	74	37	38	68 (62.5)	84 (72.7)
509.	58	94	84	86 (75.0)	64 (61.3)
510.	82	87	94	75 (66.6)	64 (61.1)
511.	84	78	79	78 (68.7)	75 (66.6)
512.	100	89	95	92 (81.2)	89 (75.0)
513.	100	81	97	92 (81.2)	91 (77.0)
514.	85	73	20	53 (56.2)	59 (59.0)
515.	21	40	35	10 (33.3)	12 (37.5)

TABLE II (Continued)

BASIC DATA FOR 1946 FRESHMAN CLASS

Case Number	1	2	3	4	5
516.	20	70	96	68 (62.5)	71 (64.6)
517.	77	23	27	25 (43.7)	
518.	81	87	97	94 (83.3)	
519.	64	47	26	25 (43.7)	7 (33.3)
520.	16	36	43	15 (37.5)	2 (20.8)
521.	49	49	21	53 (56.2)	53 (56.2)
522.	93	75	67	68 (62.5)	71 (64.6)
523.	70	68	31	53 (56.2)	37 (50.0)
524.	14	27	12	19 (41.2)	7 (33.3)
525.	95	67	76	25 (43.7)	49 (54.1)
526.	96	56	67	68 (62.5)	22 (44.4)
527.	9	12	4	6 (25.0)	12 (37.5)
528.	30	59	32	53 (56.2)	37 (50.0)
529.	67	45	77	34 (46.8)	24 (45.2)
530.	55	36	25	57 (58.3)	57 (58.3)
531.	47	64	55	78 (68.7)	89 (75.0)
532.	90	47	61	68 (62.5)	43 (52.2)
533.	54	41	70	6 (25.0)	
534.	22	8	12	21 (41.6)	
535.	97	90	100	78 (68.7)	78 (68.7)
536.	8	39	38	6 (25.0)	3 (25.0)
537.	77	66	49	53 (56.2)	
538.	90	80	83	86 (75.0)	
539.	16	46	73	53 (56.2)	43 (52.0)
540.	99	94	90	78 (68.7)	94 (79.5)
541.	85	50	40	41 (50.0)	37 (50.0)
542.	74	70	49	19 (41.2)	28 (46.6)
543.	97	93	96	92 (81.2)	95 (81.2)
544.	97	95	98	98 (93.7)	98 (87.5)
545.	83	42	87	92 (81.2)	77 (68.1)
546.	19	37	44	41 (50.0)	24 (45.0)
547.	79	64	41	97 (87.5)	95 (81.2)
548.	59	36	4	86 (75.0)	16 (40.0)
549.	35	10	23	41 (50.0)	24 (45.0)
550.	93	43	63	78 (68.7)	75 (66.6)
551.	69	39	35	53 (56.2)	49 (54.1)
552.	36	34	43	25 (43.7)	37 (50.0)
553.	63	23	49	75 (66.6)	67 (62.5)
554.	92	61	43	41 (50.0)	53 (56.2)
555.	63	26	47	41 (50.0)	17 (40.9)

TABLE II (Continued)

BASIC DATA FOR 1946 FRESHMAN CLASS

Case Number	1	2	3	4	5
556.	20	59	40	53 (56.2)	30 (47.7)
557.	77	63	93	86 (75.0)	
558.	68	44	19	86 (75.0)	54 (56.8)
559.	75	42	58	41 (50.0)	24 (45.0)
560.	27	40	58	10 (33.3)	7 (32.5)
561.	23	31	60	92 (81.2)	89 (75.0)
562.	67	57	82	41 (50.0)	50 (54.5)
563.	17	32	64	41 (50.0)	30 (47.9)
564.	40	40	32	68 (62.5)	30 (47.9)
565.	97	80	82	78 (68.7)	73 (65.9)
566.	85	92	99	68 (62.5)	
567.	36	29	32	6 (25.0)	
568.	15	19	19	25 (43.7)	
569.	21	30	47	0 (0.0)	
570.	84	63	38	41 (50.0)	61 (60.0)
571.	98	63	94	78 (68.7)	69 (63.6)
572.	12	41	51	98 (93.7)	97 (85.4)
573.	73	91	80	86 (75.0)	45 (52.5)
574.	85	57	63	53 (56.2)	57 (58.3)
575.	64	78	73	68 (62.5)	68 (63.0)
576.	85	63	88	53 (56.2)	37 (50.0)
577.	69	49	77	86 (75.0)	72 (65.0)
578.	21	57	40	68 (62.5)	30 (47.9)
579.	53	27	27	86 (75.0)	57 (57.5)
580.	98	96	100	99 (87.5)	
581.	50	36	60	86 (75.0)	
582.	37	39	31	9 (31.2)	12 (37.5)
583.	57	66	69	10 (33.3)	12 (37.5)
584.	21	29	19	25 (43.7)	3 (25.0)
585.	66	49	86	25 (43.7)	
586.	32	65	55	21 (41.6)	12 (37.5)
587.	20	34	60	15 (37.5)	7 (33.3)
588.	74	57	43	68 (62.5)	78 (68.7)
589.	75	78	95	97 (87.8)	90 (76.0)
590.	43	59	41	9 (31.2)	9 (35.0)
591.	66	86	96	53 (56.2)	49 (54.1)
592.	72	66	25	41 (50.0)	37 (50.0)
593.	74	23	49	75 (66.6)	50 (54.5)
594.	36	85	60	92 (81.2)	89 (75.0)
595.	82	17	16	41 (50.0)	

TABLE II (continued)

BASIC DATA FOR 1946 FRESHMAN CLASS

Case Number	1	2	3	4	5
596.	44	26	27	68 (62.5)	[illegible]
597.	82	46	82	86 (75.0)	82 (70.8)
598.	71	63	44	53 (56.2)	67 (62.5)
599.	36	86	79	53 (56.2)	54 (56.8)
600.	74	83	93	86 (75.0)	91 (77.0)

TABLE III

CONVERSION TABLE FOR EXPRESSING INDIANA STATE TEACHERS COLLEGE SCHOLARSHIP INDEX FOR FIRST QUARTER IN TERMS OF PERCENTILE RANK

Percentile Rank	Index	Percentile Rank	Index	Percentile Rank	Index
100	100	66	62	32	46
99	95	65	62	31	46
98	91	64	61	30	45
97	88	63	61	29	45
96	86	62	60	28	45
95	84	61	60	27	44
94	83	60	59	26	44
93	82	59	59	25	44
92	81	58	58	24	43
91	80	57	58	23	43
90	79	56	57	22	42
89	78	55	57	21	41
88	77	54	56	20	41
87	76	53	56	19	41
86	75	52	55	18	40
85	74	51	55	17	40
84	73	50	54	16	39
83	72	49	54	15	38
82	71	48	53	14	37
81	70	47	53	13	36
80	70	46	52	12	35
79	69	45	52	11	34
78	69	44	51	10	33
77	68	43	51	9	31
76	67	42	50	8	29
75	67	41	50	7	27
74	66	40	50	6	25
73	65	39	49	5	23
72	65	38	49	4	21
71	64	37	48	3	18
70	64	36	48	2	13
69	63	35	47	1	6
68	63	34	47	0	0
67	62	33	46		

NOTE: In scholarship index any fraction of five-tenths or over has been rounded off to the next highest number.

TABLE IV

CONVERSION TABLE FOR EXPRESSING INDIANA STATE TEACHERS COLLEGE SCHOLARSHIP INDEX FOR THIRD QUARTER IN TERMS OF PERCENTILE RANK

Percentile Rank	Index	Percentile Rank	Index	Percentile Rank	Index
100	100	66	62	32	48
99	92	65	62	31	48
98	87	64	61	30	48
97	85	63	61	29	47
96	83	62	60	28	47
95	81	61	60	27	46
94	80	60	60	26	46
93	79	59	59	25	45
92	78	58	59	24	45
91	77	57	58	23	45
90	76	56	57	22	44
89	75	55	57	21	44
88	75	54	57	20	43
87	74	53	56	19	43
86	74	52	56	18	42
85	73	51	55	17	41
84	73	50	55	16	40
83	72	49	54	15	40
82	71	48	54	14	39
81	70	47	53	13	39
80	70	46	53	12	38
79	69	45	53	11	37
78	69	44	52	10	36
77	68	43	52	9	35
76	67	42	52	8	34
75	67	41	51	7	33
74	66	40	51	6	32
73	66	39	51	5	30
72	65	38	50	4	27
71	65	37	50	3	25
70	64	36	50	2	23
69	64	35	49	1	20
68	63	34	49	0	18
67	63	33	49		

NOTE: In scholarship index any fraction of five-tenths or over has been rounded off to the next highest number.

BIBLIOGRAPHY

BIBLIOGRAPHY

Berdie, Ralph F., "The Prediction of College Achievement and Satisfaction," Journal of Applied Psychology, 28:239-45, June, 1944.

Curriculums for 1947-48, Catalog Issue, Bulletin of Indiana State Teachers College at Terre Haute, Vol. 40, No. 2. Terre Haute, Indiana: Indiana State Teachers College, April, 1947. 180 pp.

Feder, Daniel D, and Donald R. Mallett, "Validity of Certain Measures of Personality and Adjustment," Journal of American Association of Collegiate Registrars, 13:5-15, October, 1937.

Hurd, Archer Willis, "The Problem of the Prediction of College Success," Journal of Educational Research, 38:217-19, November, 1944.

Learned, William S. and Ben D. Wood, "The Student and His Knowledge," Bulletin Number 29, The Carnegie Foundation for the Advancement of Teaching. New York: The Carnegie Foundation for the Advancement of Teaching, 1938. 246 pp.

Martin, Lycia O., The Prediction of Success for Students in Teacher Education. New York: Bureau of Publications, Teachers College, Columbia University, 1944. 110 pp.

Odell, C. W., "Predicting the Scholastic Success of College Freshmen," Bulletin Number 37, University of Illinois, Vol. 28, No. 5. Urbana, Illinois: University of Illinois, September 13, 1927. 54 pp.

_____, "Predicting the Scholastic Success of College Students," Bulletin Number 52, University of Illinois, Vol. 28, No. 5. Urbana, Illinois: University of Illinois, September 30, 1930. 43 pp.

Russell, John Dale, "Enrollment Trends in Higher Education," Journal of American Association of Collegiate Registrars, 22:413, July, 1947.

Schmitz, Sylvester B., "Predicting Success in College: A Study of Various Criteria," Journal of Educational Psychology, 28:465, June, 1937.

Smith, Francis F., "The Use of Previous Records in Estimating College Success," Journal of Educational Psychology, 36:167-76, March, 1945.

The Terre Haute Tribune, August 20, 1947.

Thurston, L. L., and Thelma Gwinn Thurston, Psychological Examinations for College Freshmen, 1944 Norms. American Council on Education Studies, Vol. 9, No. 9, Series V. Washington, D. C.: Council of Staff Regents, May, 1945.

West, Rodney, "Student Mortality." Bulletin of the University of Minnesota, Vol. 27, No. 8. Minneapolis: University of Minnesota, March 17, 1924. 63 pp.