

The Value of Several Criteria in Predicting College Success

MILLARD E.

GLADFELTER

This study is concerned with the predictive value of various measures and instruments used in the admission of students to Temple University. Much has been done to determine the usefulness of the high-school average and the percentile rank or raw score on psychological or aptitude tests in predicting college success, but the value of personality ratings and personal interviews has been little explored. This investigation aims to establish the value of (1) the rank in high school, (2) the percentile score on the American Council Psychological Test, (3) the prediction of the high-school principal, (4) the personality estimate given the applicant by the high school, (5) the results of a personal interview by a member of the college faculty. The correlations were made for the class which will be graduated in June, 1936. In order properly to present the findings, the criteria which were measured will be analyzed separately, then compositely.

I. THE HIGH-SCHOOL AVERAGE

The correlations presented in Tables I and II differ somewhat from those presented in Table V. This difference can be attributed to the cases studied. Tables I and II include only students from Philadelphia high schools. These students are all non-residents and are admitted from large high schools. Naturally they do not face the problems of adjustment encountered by resident students who come from smaller high schools and more distant areas.

Fifty-four per cent of the students in this Freshman Class came from Philadelphia high schools. These cases presented a uniform marking system and a fairly level standard in grading. The same syllabi are used in all Philadelphia public high schools and the general limits of study are coincident. Thus the average grades are fairly comparable and the problems of adjustment which confront students beginning a college course are somewhat similar. There is a correlation of .68 between the numerical high-school average, when all major subjects are considered, and the average made at the end of the Freshman year for students

compares very favorably with the findings of Pettengill in his study of students admitted to the University of Minnesota from Minneapolis and St. Paul high schools.' Separate correlations were made to determine the relationship of achievement in separate study fields to success in those same fields in college. Some of these findings are almost as high as the composite correlation. There is a high relationship between success in English, Social Sciences, and Chemistry with correlations of .59, .66 and .65 respectively. The Mathematics

TABLE 1*

CORRELATION BETWEEN THE HIGH-SCHOOL AVERAGE AND THE COLLEGE AVERAGE FOR FRESHMEN ADMITTED TO TEMPLE UNIVERSITY IN SEPTEMBER, 1932

MRABDRES CORRRLATED	No. or CASRS	r Four year hi
age.....	221	.68
t.02 Four year high-school English average and Freshman English average	246	
	.59±.02 High-	
school Modern Language and college Modern Language.....	160	.48
±.04 First year Algebra and Geometry, and General Mathematics.....	38	.36
±.09 Two years of Algebra and Geometry, and General Mathematics	30	
	.50±.09 High-	
school Trigonometry and college Trigonometry.....	13	.55
±.13 Average in Social Science and college European History.....	168	.66 ±.02
Average in Science and college Zoology.....	44	.38 ±.08
Average in Science and college Biology.....	35	.44±.09
Average in Science and college Chemistry.....	46	.65

±.05 * This table includes graduates from Philadelphia high schools only. correlations are especially interesting. General Mathematics is a required course in the Teachers College. It is a functional course taught from the practical point of view. This change in approach and the introduction of new situations probably accounts for correlations (.36 and .50) which are lower than that between high-school and college Trigonometry (.55). It is also true that students who carry Trigonometry in high school usually excel in **Mathematics and offer** more mathematical background than do those who complete the minimum requirements only.

II. THE APTITUDE TEST

In this part of the study an effort was made to determine the ' Pettengill, True E., "Size of High Schools and Predictive Value of Class Rank and Aptitude Test Rank." *Bulletin of the American*

89 value of the American Council Psychological Test as a single instrument for prediction. The scores made on the entire test were correlated with the high-school and the Freshman averages. The respective correlations are .57 and .52. The separate parts of the test were then correlated with the attainment in the specific fields to which they seemed to bear some relationship. In this series, the relation between high-school and college English and the scores on the part of the test devoted to opposites

and completion were highest (.56 TABLE II*)

CORRELATION BETWEEN VARIOUS MEASURES AND THE AMERICAN COUNCIL PSYCHOLOGICAL TEST FOR FRESHMEN AT TEMPLE UNIVERSITY

MDASDRRS CORRRLATRD	No. or CAws	r
Four year high-school average and Psychological score.....	301 .58±.02	
Freshman college average and Psychological score. .	204	.52
±.03 High-school Modern Language and Psychological Language score.....	298	.38±-
.03 College Modern Language and Psychological Language score.....	144	.25
±.05 College General Mathematics and Psychological Arithmetic score	35	.15
±.11 High-school Algebra and Psychological Arithmetic score	292	.39
±.03 High-school Algebra and Psychological Analogies score.....	292	.34
±.03 High-school English and Psychological Opposites and Completion	300	
	.56±.02 College	
English and Psychological Opposites and Completion.....	230	.46 ±.03

* This table includes graduates from Philadelphia high schools only. and .46). The scores made on the artificial language section gave a correlation of .38 and .25 with high-school and college Modern Language. The value of the entire test as a criterion for admission compares very favorably with the findings reported by Holzinger? He found that the percentile rank on the Thurstone Test had a correlation of .51 with the Freshman average for the first two quarters. Though no multiple correlations were run, the separate parts of the test seem to have little value for the prediction of success in the separate subject fields, with the exception of the relationship between accomplishment on the opposites and completion test and college English.

' *The University of Chicago Survey* (University of Chicago Press, 1933) Vol. V, Part VI, p. 310.

III. THE PERSONAL RATING SHEET

At its inception, this study was concerned primarily with the usefulness of the rating sheet and the results of the personal interview. It was soon discovered, however, that to limit the findings to these measures would make the study too exclusive to be helpful. Accordingly, an investigation into the relationship of the high-school rank and the score on the American Council Psychological Test to success in college was included. The findings on this phase of the study have been presented in the foregoing tables. The second part of the study concerns the validity of the ratings given the applicant by the high-school personnel on characteristics which seemed to have a relationship to college success, and the usefulness of a personal interview with each applicant by a member of the college faculty.

The rating sheet included the following six characteristics: (1) physical vigor, (2) initiative, (3) leadership, (4) responsibility, (5) intellectual curiosity, (6) personality. These were scored on a ten-point scale on the qualities, superior, good, average, poor and very poor.

Aside from the personal rating chart, provision was made for an estimate by the school principal of the degree of success the applicant could be expected to attain in the college course selected. The range on this scale extended from "superior" to "failing." These ratings were volunteered by the high-school principal, college adviser, school counselor, or a teacher. The writer recognizes the criticism which can be raised because of the varying standards for personal ratings employed by different individuals in different schools and because of the differences in agreement over the meaning of the characteristics on which the applicants were rated. For that reason selected cases were used in this part of the study because they represented schools in which the officers seemed to exercise discretion in rating each student. The fact that the ratings in a small school are likely to be shaded and those in a large school are usually casual was taken into consideration and cases in which midpoints were consistently used were deleted.

It is interesting to note that the correlations between the estimate on the separate characteristics and the high-school average are consistently higher than those with the college average. The ratings on intellectual curiosity present a comparatively high correlation with performance in high school (.61). This correlation drops to .36 when considered with college scholarship. The

AMERICAN ASSOCIATION OF COLLEGIATE REGISTRARS

1

91 personal estimates by a high-school officer to college success, as indicated by this study, is not as high as the findings presented by Hart son.' The principal's prediction correlates very highly with the highschool average but drops from .69 to .45 when correlated with the college average.

TABLE III
INTERCORRELATIONS OF THE ITEMS ON THE PERSONAL RATING SHEET AND THE HIGH-SCHOOL AND COLLEGE AVERAGES

MHASUHBS COHB.ELATHD	HIGH-SCHOOL AVERAGE		Coramm AvrRAas	
	N	r	N	r
1. Physical vigor	85	.03 ± .06	164	.09 ± .05
2. Initiative.....	93	.52 ± .05	180	.38 ± .04
3. Leadership.....	88	.28 ± .06	172	.23 ± .04
4. Responsibility	90	.50 ± .05	178	.21 ± .04
5. Intellectual curiosity. . .	89	.61 ± .04	177	.46 ± .04
6. Personality	89	.31 ± .06	174	.25 ± .04
Total estimate	79	.48 ± .05	157	.28 ± .04
Principal's prediction.....	91	.69 ± .03	172	.45 ± .04

If, therefore, the purpose of the rating sheet is to measure the probability of success in college, the recommendation of the principal has the greatest predictive value. It should be said, however, that certain items on the rating sheet have a relationship to personal qualities which may contribute only indirectly to college scholarship. Personality and leadership may be contributors to or concomitants of success but certainly cannot be considered as directly related to it as are intellectual curiosity and initiative.

IV. THE PERSONAL INTERVIEW

Before discussing the findings which concern the personal interview, it is probably necessary to describe the relation of the

the grades earned in particular study fields, when determining the applicant's temporary status. He is told, however, that regardless of his standing, he must appear at the University on an assigned day for the aptitude test, the English test, and a personal interview.

The primary purpose of the interview is to assist in the selection of students and to offer guidance to students in their choice of the proper college course.

The success of any interview is largely dependent upon the care exercised in the selection of the interviewer. He should have faculty rank and be free from any interest in the enrolment in a department or curriculum. It is also imperative that he should be in harmony with the educational policies of the institution and intimately familiar with its details. Consideration should be given to his viewpoints and his personal likes and dislikes. He should be able to place his academic and professional interests in the background and approach the candidate simply and naturally.

With these criteria in mind, the interviewers were chosen from a list recommended by the deans of the various colleges. They were assigned in advance to a definite room and given a complete list of the candidates to be interviewed and the hour at which they were to appear. They were not given, however, detailed data about the applicants, as it was thought this might have a prejudicial effect. Out of forty different interviewers who have served, a majority have given very complete and helpful analyses. Some members have been more successful than others in securing the desired information. These possess an ability to arouse the interest of the candidate because of an understanding of his problems.

The question of having more than one interviewer for each candidate arose. It was considered desirable in cases of negative observations. The interviewer, after submitting a rating of "poor" and "very poor," desired the opinion of a second observer. It was found, however, that this practice supported a previous finding that in general there is a transfer in each interviewer's bias.⁶

The interviewer was primarily an observer and secondarily an adviser. Consequently it was important for him to record concretely the observations of each interview. In preparing the rating form it was remembered that an attempt should be made at objectivity rather than subjectivity. Since these observations would be largely

⁶Rice, S. A. "Contagious Bias in the Interview: A Methodological Note," *American Journal of Sociology*, 35 (1929), pp. 420-23.

193 traits in terms of trait actions and conduct, the list had to be limited and as nearly as possible mutually exclusive.⁶ After the first series of interviews, the members of the committee agreed that recording a successful interview depended upon a well-balanced interview form. Accordingly, an extended list of positive, negative, and neutral, related trait actions were placed on the form. It was further agreed that these three major observations could probably be made during the allotted ten-minute interview; (1) the *personal appearance* of the applicant, (2) the *use of English* as evidenced during the conversation, and (3) the *poise* of the applicant. These were rated on a five-point scale according to a list of related positive and negative trait actions. The interviewer was then asked to give his general estimate of the candidate in relation to his educational plans and the impression made during the brief meeting. Space was provided on the form for "General Remarks." The observations made here were descriptive of outstanding impressions. These comments were quite helpful and enlightening. Some of the most useful related to the guidance of applicants who were fitted for college but who, because of personal and physical handicaps, might experience difficulty in the profession of their choice.

The student also used the interview as an opportunity to ask questions about certain perplexing problems which correspondence and catalogs failed to clarify. Many ascertained whether or not they were seeking admission to the proper college and course. They also used the opportunity to make a preliminary survey of the physical surroundings of the institution and to meet some of the personnel. The advantages of such an introduction to college are obvious.

After examining Table IV, one can conclude only that as an instrument for the prediction of success in college, the personal interview has little or no value. There have been cases in which the interviewer predicted failure for valedictorians and success for applicants who ranked in the lowest percentile on tests. An interview is highly subjective and reflects only the impressions made upon one individual by another individual. These findings should not, however, in themselves cast out the interview.

If the purpose of the interview is to assist in the selection of students "socially" and in the guidance of students educationally, then these findings should encourage those who use the interview to place all emphasis upon these objectives.

⁶Charters, W. W., *Teaching of Ideals*, The Macmillan Co., 1929, p. 65.