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ABSTRACT

An 80-item rating scale, drawn from faculty descriptions of students, was completed by 407 faculty for 398 students in 8 institutions to ascertain desirable traits beyond those directly related to academic achievement. The items, including a student desirability variable, together with SAT scores, high school rank, and freshman grade point average, were correlated and factored by the diagonal method to permit analysis of the reliable variance in grades, desirability and desirability apart from grades. Variance in desirability beyond that attributable to level of academic performance was found. Desirability was also a matter of faculty-perceived intellectual ability and values; although these are related to academic performance, there is further substantial variance that is part of the formulation of the desirable student. The SAT, however, contributes negatively to desirability apart from grades. Limitations of the study are fully discussed. See also TM 000 174 and TM numbers 000 177-181. (Author/ER)

FACULTY PERCEPTIONS OF STUDENTS

II. Faculty Definition of Desirable Student Traits

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FACULTY PERCEPTIONS OF STUDENTS

II. Faculty Definition of Desirable Student Traits

Abstract

The primary purpose of this study was to determine student traits that faculty associate with desirability, separate and apart from those reflected by the traditional academic achievement indices.

Ratings of students on 80 variables, including a student desirability variable, were obtained, together with high school and college grade averages and SAT scores. The resulting 84 x 84 correlation matrix was factored by the diagonal method, using precise communality estimates from a separate factor analysis. In this case, the procedure permits partialling out the variance in desirability and the other variables which is attributable to academic performance, and definition of residual desirability in terms of relationship of the residual on the other variables to desirability apart from academic performance. The diagonal factoring method was also used to examine the content, including academic performance, of general desirability, and to define desirability separate and apart from SAT and academic performance.

Ratings of intellectual ability and values, motivation, and creativity, as well as actual grade point average, were found to be related to general desirability ratings. Desirability apart from grades, however, appears to consist of such traits as likableness, ethicality, open-mindedness, altruism, maturity, and self-insight, although ratings of intellectual ability and values have components related to grades and to desirability apart from grades. Ability as measured by the SAT, though reasonably related to performance, appears to have negative relationship to desirability apart from grades.

FACULTY PERCEPTIONS OF STUDENTS

II. Faculty Definition of Desirable Student Traits

The Origin

The study from which this report is drawn was begun in 1957 by the Educational Testing Service and eight cooperating institutions (Amherst, Caltech, Cornell, Dartmouth, MIT, RPI, Rutgers, and Stanford), with initial support from the Sloan Foundation and later support by the College Entrance Examination Board and Educational Testing Service. The general purpose of the long-term research is to establish a reliable, valid, and relevant criterion or criterion-complex of success in college beyond that afforded by direct measures of academic performance (grade-point average or scores on conventional achievement tests).

There are a number of reasons why such a research would seem useful. One has to do with the question of the adequacy of the traditional criteria (grades or fact of graduation) in encompassing all of the important goals of higher education. From this perspective, there may be implications for more useful specification of goals and more effective evaluation of the total growth experience. How well does the composite of assigned grades, instructor by instructor and course by course, add up to what the total college experience should be concerned with? Are there elements therein that may be antithetical (or simply irrelevant) to later contribution to self or society that the college experience should permit the individual to make? What growth beyond that reflected by grade average is a conscious, contrived (if unspecified) part of the college goals, and what is mere happenstance?

A second reason for concern with the criterion problem grows out of modern selective admissions problems and practices. That there is little

change in the picture provided by Harris' (1940) review of academic prediction studies prior to 1940 is attested by the more recent review by Fishman and Pasanella (1960). The only selection tools that have widespread employment and that have clearly proved their value are measures of scholastic aptitude and achievement. Yet, their value has been tested in almost all instances against an academic grade-average criterion. With no substantial improvement in predictability over the last four decades, despite the versatility psychologists have shown in contriving potential predictors, the problem may lie in the criterion.

In a study of prediction of achievement in a Naval gunnery school, Frederiksen (1954, p. 98) found that a test of reading comprehension had the highest validity for predicting grades, though course objectives were expressed in terms of manual performance and the prediction battery included tests of mechanical knowledge and performance. Examination revealed that grades were based on tests of content of technical manuals; with revision of this criterion to reflect more faithfully the instructional goals, the more reasonable predictors worked and the validities for the reading comprehension test shrunk. The point is, of course, that we may be predicting grades as they are, rather than as they might (or should) be. Our acts of faith in perpetuating personality theories and tests related to desirable growth and achievement may be more likely substantiated against criteria reflecting application of these qualities.

The case for looking for additional qualities that may be employed as criteria is made more urgent by those highly selective institutions, now oversupplied with applicants qualified on SAT, that need other means of differentiating among prospective students. Admissions directors, reflecting

faculty and administrative concern, have become vocal in citing interest in qualities or characteristics beyond those measured by SAT and the high school rank. Yet, there is little agreement as to what these qualities may be and active debate as to how in these structures a freshman class should be constituted if indeed these student traits be subject to manipulation by selective admissions. Past experience would indicate that the problem is not likely to be solved by fresh zeal in tried-but-disproved methods such as interview by admissions people, or by new pitches for old personality tests by their dedicated psychologist authors. Criterion qualities must first be carefully established.

It is for these reasons that this series of criterion-definition studies was launched.

Purpose of the Present Study

One high priority source of definition of desirable student traits is the teaching faculty. Not only do they control, within limits set by institutional philosophy and administrative pressures, the flow of students through the institution, but also they represent a knowledge of the disciplines to be taught and their prerequisites; more than anyone else, they have firsthand contact with the growth-inducing process and the students immersed in this experience.

Faculty traditionally and officially report their evaluation of students through the grading system. Yet, the values of instructors may extend beyond those qualities amenable to assessment within the evaluative structure, or beyond those that can be incorporated into a single unit of instruction. For example, humanities faculty are believed to value interest in ideas; however,

it is conceivable that bright or grade-motivated students can perform well on practicable course requirements without deep, personal involvement in ideological issues. Similarly, independent study beyond course requirements may be valued but not reflected in grades.

This report is the second in a series concerned with the source, content, structure, reliability, validity, and relevance of faculty perceptions of desirable student traits. Specifically, the analyses presented herein are directed toward the specification of personal qualities that faculty value in students, and, most particularly those that are not related to academic performance as measured by grades.

Procedure

The Development of the Rating Scales

The development of the rating scales employed in the present analysis is described in detail in the first report in this series (Davis, 1964a). In brief, however, the work began with the solicitation from faculty of free verbal descriptions of highly desirable and highly undesirable students, each at a specified variety of academic performance levels. A first rating scale was drawn from a sample of traits suggested by thematic analysis of this material, employed in new study, and refined by factor analytic methods and the later incorporation of additional traits from the original source material. The result was a second experimental rating scale, hereinafter referred to as the Student Rating Form (SRF), containing 80 bipolar traits for rating on a five-point continuum. This form was employed in the present analysis as the basic source of data.

The Sample

In each of the eight participating institutions, a random sample of male upperclassmen was drawn to yield an N of from 50 to 65 subjects for each institution. At one institution (Amherst), an additional random sample of freshmen was drawn. Raters for all students were assigned by random selection from each student's official class schedule for the last term of the academic year (1961-62); attempts were made to obtain two raters for each student (except at Dartmouth, where every current teaching faculty member for each student, as well as his major advisor, was solicited). Where class size, hostility of instructor toward the study, inaccuracies in the official class schedule, or other circumstances obviated participation, attempts were made through an institutional representative to locate other faculty members to serve as replacement raters.

For each of the 80 basic items, the rater was given the opportunity to check an "unknown" box if he felt he had insufficient knowledge of the student with regard to that particular trait. Those rating forms with more than 50% of the items thus marked were excluded from the present analysis. The original numbers of students and raters against the final numbers meeting the 50% completion criterion are shown in Table 1. Table 2 shows the composition of the sample of faculty by teaching field. Thus, the present study is based on 696 ratings involving 398 students and 407 faculty members from eight institutions.

The Conditions of Rating

Faculty members selected as raters were approached by mail shortly after the beginning of the final term of the 1961-62 academic year, with a brief request for participation, the name of the student or students to be rated,

Table 1

Description of Sample

Institution and Class	Numbers of Ratings, Students, and Raters Obtained						Numbers Used in Analyses (50% or more of items completed)		
	No. Subjects in Sample	No. Ratings Requested*	No. Ratings Obtained*	% Returns**	No. Subjects Rated	No. Raters	No. Ratings	No. Students	No. Raters
Amherst '62	65	123	106	86	62	57	97	59	57
Amherst '65	65	126	104	83	62	41	73	52	37
Caltech '62	52	214	153	71	52	55	114	51	45
Cornell '64	50	100	89	89	50	33	77	41	28
Dartmouth '63	50	263	161	61	46	92	13[illegible]	45	86
MIT '63	51	102	66	65	45	47	41	34	31
RPI '62	50	120	58	48	40	25	50	35	21
Rutgers '62	50	103	90	87	50	72	73	46	60
Stanford '63	54	140	84	60	41	63	54	3[illegible]	42
TOTAL	487	1291	911	71	445	485	696	398	407

*Reflects original sample plus replacement raters.

**Reflects inability to obtain ratings for all reasons, including refusal of initially assigned rater.

Table 2

Ratings According to Teaching Field of Raters

(50% Completion Sample)

Department	No. Ratings		% of Total	
Engineering:				
Electrical	42		6.0	
Mechanical & related fields	37		5.3	
Civil & related fields	24		3.5	
Chemical	18		2.6	
Others	34		4.9	
All Engineering Fields		155		22.3
Humanities:				
English & Comparative Literature	81		11.6	
Modern & Romance Languages	50		7.2	
Philosophy & Religion	29		4.2	
Art & Music	20		2.9	
Misc. (Classics, Greek, Humanities)	8		1.1	
All Humanities		188		27.0
Natural Sciences:				
Physics & Astronomy	38		5.5	
Biology & Zoology	28		4.0	
Mathematics	28		4.0	
Chemistry	26		3.7	
Geology & related fields	14		2.0	
All Natural Sciences		134		19.2
Nonacademic & Education:				
Military & related sciences	20		2.9	
Education & Health & Physical Education	18		2.6	
Drama & Speech	16		2.3	
All Nonacademic & Education		54		7.8
Social Sciences:				
History	56		8.1	
Economics	50		7.2	
Political Science	21		3.0	
Psychology	17		2.4	
Misc. Social Studies	17		2.4	
All Social Sciences		161		23.1
Miscellaneous (administrative or unknown)	4	4	.6	.6
TOTALS:	696		100.0%	

and a sample rating form. It was hoped that this procedure would permit some opportunity for each rater to get to know the student by the time the actual ratings were required. Shortly before final exams, the actual request, final forms for rating, and instructions were transmitted to each faculty member who had not indicated unwillingness or inability to participate; follow-ups by mail, and in some cases an ultimate phone call from a local institutional representative, were used to insure as complete a response as possible. Ultimately, 71% of those faculty members approached returned a completed rating form (Table 1).

Statistical Treatment of Data

Treating each set of ratings as a unit, intercorrelations among the 80 rating scale items were computed, together with the intercorrelations among these items and SAT-V, SAT-M, High School Rank-in-Class (HSR), and Freshman Grade-Point Average (GPA) of the student rated. (The two measures of academic standing were first transmuted to a standard score scale with a mean of 50 and a S.D. of 10 within each institutional sample.) Good communality estimates for the 84 variables, crucial for diagonal factoring, were obtained from a separate factor analysis (Davis, 1964b) where eight iterations brought the maximum residual communality value down to .0028.

The last of the 80 rating-scale items related specifically to the question of student desirability by asking for a rating on "The kind of student this institution should (or should not) admit." Using the diagonal method of factoring[1] (Thurstone, 1947, pp. 101-110) and the communality

[1]The writer is indebted to John Hemphill for suggesting this application of the diagonal method.

estimates obtained from the separate factor analysis, a desirability factor was first defined by placing a vector through the desirability item, so that loadings of the other variables on this "factor" might be examined. This procedure, of course, asks the question: Of the reliable variance attributable to desirability, what proportion of the variance contributed by the other variables (items) may reflect the same quality, and what do these relationships imply as to the meaning of desirability in the faculty mind? This first factoring by the diagonal method was continued by placing a second vector through the residual variance in GPA, thus asking the question: after the variance attributable to desirability has been removed, what is left that may be related to academic performance? Finally, residual communalities were computed to determine what variance might be left in each variable after that attributable to desirability and academic performance had been removed.

In a second diagonal factoring, the first vector was placed through GPA and the second vector through a point defined by the residual for desirability. This procedure permits first the removal of variance attributable to grades, and then the examination of the conceptual content of desirability separate and apart from academic performance. This second diagonal factoring was continued by placing a third vector through the residual for SAT-V. This procedure places GPA, desirability apart from grades, and SAT-V orthogonal to one another, and should reveal some specification of the variance remaining in and after that portion related to grades and to desirability has been controlled. Residual communality values were again computed to show reliable variance remaining that was not related to the first three factors.

Finally, it was felt that a useful by-product of these data and methods might result by placing the first vector through SAT-V, a second vector

through the GPA residual, and a third through the remaining residual for desirability. This procedure asks, first, for the relationship of the various items to the reliable variance in SAT; second, for relationship of items to grades after variance attributable to SAT has been removed; and, then, the variance attributable to desirability after that attributable to both SAT and grades has been removed. The second vector defines, in effect, the nonpredictable (from SAT) portion of the reliable variance in academic performance for examination against the various traits named in the rating scale items, and thus may provide some insight into factors instructors associate with academic performance that are not reflected by SAT.

Results and Discussion

Table 3 shows a portion of the 84 x 84 correlation matrix, and the correlations between these variables and two others generated by assigning each case the mean SAT-V and SAT-M scores for the institutional group represented. Not all variables in the original matrix are shown because of space limitations; those selected for illustrative purposes are the control variables and those 16 items from the rating scales with the highest loading on each of the factors best defined by rating-scale items in the equimax rotation (Davis, 1964b) involving the same population.

In general, the rating-scale items tend to have moderate positive relationships with one another. (It should be remembered that a selection of items which in each case best define a separate factor would tend to have lower intercorrelations with one another than with other items; therefore, the item intercorrelations shown tend to represent the lower limits of the

Table 3

Intercorrelations among Selected Variables Drawn From Faculty Ratings and Control Variables

(N = 690)

Item	Content	Mean	S.D.	2	5	10	11	12	16	19	20	30	39	42	45	47	49	51	56	SAT-V Mean	SAT-M Mean	SAT-V	SAT-M	HSR	FGPA	GG
2	Steady work	3.55	1.20	-	32	27	00	14	22	34	28	17	02	00	26	26	21	22	48	06	07	03	03	10	17	36
5	Pleasantness	4.20	.92		-	31	12	12	31	42	43	31	20	21	47	36	26	38	29	07	07	-04	02	07	07	42
10	Intellectual interest	3.45	.90			-	01	-27	60	33	39	30	16	04	46	37	57	34	44	05	01	21	12	16	25	51
11	Freedom from worry	3.08	.81				-	03	06	08	25	19	05	30	14	23	11	08	-06	05	09	-03	04	01	02	06
12	Conformity	3.15	.88					-	-30	01	14	04	-22	10	-03	02	-24	-01	01	03	03	-12	-10	-04	-11	-12
16	Originality	3.39	1.03						-	28	31	30	19	03	44	33	67	24	36	09	09	24	20	20	30	57
19	Honesty	4.48	.79							-	27	19	26	-04	35	32	16	38	31	00	03	02	07	09	13	46
20	Social maturity	3.46	1.01								-	46	00	30	38	46	31	34	27	06	04	02	00	02	08	39
30	Leadership among peers	3.09	.90									-	00	38	22	30	29	39	27	04	03	04	00	08	12	33
39	Freedom from status-centeredness	3.15	.79										-	-17	23	17	08	23	02	00	00	-03	02	05	-03	19
42	Extraversion	2.97	.99											-	13	17	07	17	08	02	02	-03	00	01	-01	09
45	Open-mindedness	3.93	.85												-	34	42	34	33	07	11	08	08	07	14	46
47	Self-understanding	3.28	.82													-	32	38	30	08	07	06	04	13	10	41
49	Intellectual quickness	3.53	1.04														-	16	39	05	06	03	04	26	39	57
51	Concern for others' welfare	3.32	.78															-	22		06	-04	00	03	01	30
56	Motivation to achieve	3.72	1.02																-	05	03	09	05	13	25	48
SAT-V	Institutional sample mean	607	39.8																	-	92	49	59	00	-03	-04
SAT-M	Institutional sample mean	665	56.9																		-	52	64	-01	-04	-04
SAT-V		601	83																			-	52	23	36	06
SAT-M		662	90																				-	28	22	07
High school rank		50.1	9.42																					-	41	17
Freshman grade-point average		50.8	9.86																						-	31
80	Kind of student institution should admit	3.08	1.16																							-

range.) Some halo is surely operant in the ratings. However, of more interest are the relationships of the rating-scale items to the control variables and to the desirability criterion item.

The absence of relationship between the SAT means and all other non-SAT variables, including HSR and GPA, would suggest that there is no tendency for faculty at institutions with high SAT means to rate students higher on the rating scales than do faculty at institutions with lower SAT means. This is, of course, to be expected. However, when the SAT scores of the student rated (rather than of his institutional group) are considered, the relationships with ratings on such traits as intellectual interest, originality, and intellectual quickness are positive and significant beyond the .01 level of confidence (the same holds between ratings of these traits and HSR or GPA). Although the eight institutional subsamples in each case have HSR and GPA means of 50 by definition from normalizing, and although the institutions are each relatively homogeneous on SAT from selectivity factors (though variable from institution to institution), the relationships within the total sample of SAT-V and SAT-M to GPA (.36 and .22 respectively) are reasonably high. The relationship between HSR and GPA ($r = .41$) is also reasonable. It would seem safe to assume that for the institutions represented SAT and HSR are operating as expected with regard to prediction of GPA.

Desirability, the crucial variable for this study, is probably most notable for the absence of significant relationship with SAT. Instrument factors could account for the generally moderate relationships with other rating-scale items, although the relationship of desirability to GPA is also moderate ($r = .31$).

A better answer to the question of the meaning of desirability in the faculty mind may be provided by the factor-analytic approach. Table 4 presents the communalities, the loadings on a first factor defined by vector through desirability, the loadings on a second orthogonal factor defined by vector through the residual for GPA, and the residual communalities. (Items are grouped in the clusters formed by the separate equimax rotation.)

In general, highest loadings on desirability appear for items labeled Intellectual Ability, Intellectual Values, Motivation, and Creativity, although loadings in many other areas are high. Considering instrument factors, it is probably of greater interest here to note those areas where loadings are low: Conformity, Extraversion, Popularity, Anxiety, and Status-Centeredness are traits that faculty do not relate to desirability. The loadings of SAT-V and SAT-M of .07 and .08, as well as the low .22 for HSR, indicate that these variables also have little to do with desirability, although the moderate loading of .39 for GPA indicates that grade achievement in itself is associated with desirability. Halo or instrument factors do, of course, inflate the rating-scale item loadings; but, in general, these data indicate that faculty associate desirability with their impression, however acquired, of the student's intellectual ability, motivation, values, and achievement; that SAT does not contribute to this impression; and that personality traits beyond general likability which are not stated with intellectual implications (e.g., extraversion, anxiety) are not aspects of desirability.

The second factor, which is that part of GPA that is unrelated to desirability, acquires an interesting pattern of loadings. The traditional

Factor Loadings: Diagonal Factoring with Vectors Placed Through Desirability (I) and GPA (II)

Item	Content	h^2	I (80)	II (GPA)	Res Com
80.	Kind of S institution should admit	63	79	00	00
-	Freshman GPA	54	39	62	00
-	SAT-V	56	07	53	27
-	SAT-M	52	08	30	43
-	High School Rank	31	22	52	00
DEPENDABILITY					
2.	works steadily	63	45	-01	43
14.	meets deadlines	57	46	-08	35
38.	thorough	77	67	-02	32
62.	completes undertakings	61	53	-13	32
50.	industrious	76	66	-05	33
61.	performs to top of ability	58	49	08	34
26.	self-disciplined	64	59	-02	30
INTELLECTUAL ABILITY					
49.	intellectually quick	82	71	17	28
13.	above average ability	73	74	18	15
28.	good at analyzing	70	70	12	20
25.	good grasp of abstract	68	64	12	26
37.	makes good grades with ease	61	50	26	29
1.	high academic performance	71	77	25	06
CONFORMITY					
12.	conforming	67	-15	-08	64
48.	orthodox in behavior	58	06	-04	57
24.	conventional	67	-34	-07	55
60.	accepts majority values	44	-10	-07	43
72.	has few idiosyncrasies	42	21	-12	36
INTELLECTUAL VALUES					
10.	broad intellectual interests	75	64	00	33
8.	culturally rich	65	52	07	37
46.	reads widely	55	49	00	30
64.	intellectually versatile	65	67	09	20
73.	high intellectual curiosity	80	79	03	17
34.	interested in ideas	69	78	-13	06
21.	intellectually mature	71	76	00	13
ETHICALITY					
19.	honest	71	58	-15	36
43.	acts ethically	64	48	-15	39
67.	principled	70	55	-19	36
MOTIVATION					
56.	high motivation to achieve	65	60	03	29
3.	high interest in chosen field	44	52	-03	18
70.	a serious student	71	72	02	20
22.	eager to learn	78	78	-06	16
68.	values like those of faculty	39	52	-07	11
LIKABLENESS					
5.	pleasant	72	53	-22	39
29.	likable	78	60	-26	35
65.	affable	67	36	-21	49
17.	cooperative	61	57	-25	22
74.	good sense of humor	58	47	-27	29
EXTRAVERSION					
42.	extraverted	66	11	-09	63
6.	gregarious	66	12	-08	66
71.	placid	58	-23	-13	51
63.	optimistic	54	30	-12	43
79.	high level of physical energy	39	39	-10	23
SELF-SUFFICIENCY/CREATIVITY					
31.	self-directing	59	53	03	29
16.	shows originality	77	71	03	26
4.	imaginative	77	71	00	26
7.	independent	55	57	02	22
52.	creative	69	68	-03	23
40.	deep	63	69	-07	15
OPEN-MINDEDNESS					
45.	open-minded	67	58	-14	32
57.	fair-minded	61	51	-13	33
69.	open to new experience	55	54	-07	26
77.	generally objective in forming opinions	53	56	-10	20
9.	flexible	57	45	-14	34
41.	willing to take directions	56	44	-10	34
58.	realistic in outlook	51	46	-07	26
33.	willing to ask questions	56	57	-07	23
ALTRUISM					
51.	high concern for welfare of others	76	38	-33	57
27.	altruistic	58	34	-14	45
15.	interested in others	65	40	-26	43
75.	high respect for human dignity	47	53	-03	14
MATURITY					
20.	socially mature	71	50	-18	43
44.	sophisticated	55	30	-03	45
74.	at home in college culture	53	55	-09	21
POPULARITY					
30.	leader among peers	64	41	-06	46
18.	active in campus life	55	37	-13	47
66.	works well with others	51	32	-14	45
54.	liked by peers	60	38	-14	43
ANXIETY					
11.	seldom worries	51	08	-01	50
23.	calm	51	16	-05	48
55.	low need for reassurance	45	20	05	47
53.	stable	55	42	-04	47
35.	happy	54	37	-10	47
SELF-INSIGHT					
47.	good self-understanding	54	52	-17	24
59.	positive family influence	18	20	-07	24
32.	personal goals clear	51	52	-01	24
STATUS-CENTEREDNESS					
39.	not status-centered	43	04	-21	32
36.	low need to stand out	48	-15	-04	46
76.	modest	58	23	-24	47

preadmissions indices load nicely here (although substantial residual communality remains for SAT-M after the variance attributable to desirability and GPA has been removed). The rating-scale item loadings reach in no instance the size of those for SAT and HSR; part of this may be due to an instrument vs. noninstrument situation, or part may be due to the familiarity of the raters with performance and not SAT, a reasonable condition once grade-achievement patterns have been established. Yet, there would seem to be clear evidence that SAT and HSR are related to academic performance after the desirability variance has been removed, and that faculty have some capability to recognize an ability-achievement trait that is separate and apart from desirability, for among the rating-scale item clusters only those labeled Intellectual Ability produce consistently positive (though low) loadings. There is some evidence in these patterns that, although desirability is in part academic performance, there is further variance in academic performance related to (recognized) ability which is not a part of desirability.

Two other aspects of the data presented in Table 4 deserve comment. First is the relatively consistent negative loadings on the GPA factor of the rating-scale items other than those concerned with intellectual ability. These are low, although in three clusters (Likableness, Altruism, and Status-Centeredness) there are two or more items with loadings above -.20. Although the evidence is not substantial, there is nevertheless some indication that faculty associate achievement apart from desirability with difficulty in liking the student, with his low respect for others, or with his concern with personal status.

The other aspect of these data relates to those areas where reliable variance remains after that associated with desirability and achievement has

been removed. There are substantial residual values in the variables in the clusters labeled Conformity, Extraversion, Altruism, and Anxiety, and moderate residuals in Dependability, Ethicality, Likableness, Maturity, Popularity, and Status-Centeredness. Faculty can discern differences among students in these areas that they do not associate with desirability or academic performance.

Table 5 presents data that are more directly concerned with the basic question of this series of studies. Here, the variance in ratings due to academic achievement is first removed, and desirability separate and apart from achievement may be defined in terms of items that load on the second vector placed through the residual on Item 80, the desirability variable.

For purposes of discussion, three kinds of patterns may be singled out; these are clusters of rating-scale items that have zero or low loadings on achievement but high loadings on desirability, those with high loadings on both, and those with low loadings on both. In the first group fall the items under Ethicality, Likableness, Open-Mindedness, Altruism, Maturity, and Self-Insight; in the second category fall the items under Intellectual Ability, Intellectual Values, and possibly Dependability, Motivation, and Self-Efficiency/Creativity. This would indicate that, with ability-achievement aside, faculty value the student who is likable and cooperative, open-minded and flexible, mature and respectful of human dignity, and who has good self-understanding and clear personal goals. Although Intellectual Ability and Intellectual Values are related substantially to grade achievement, there is as much or more reliable variance in these variables that explains desirability apart from grades. (It should be noted that the single item with the highest loading on desirability is "interested in ideas.")

Table 1

Factor Loadings: Diagonal Factoring with Vectors Placed Through GPA (I), Conformity (II) and SAT-V (III)

Item	Content	I (GPA)	II (80)	III (SAT-V)	Res Com
-	Freshman GPA	74	00	00	00
80.	Kind of S institution should admit	42	67	00	00
-	SAT-V	49	-00	53	00
-	SAT-M	29	-09	68	00
-	High School Rank	55	-09	-14	00
DEPENDABILITY					
2.	works steadily	23	38	10	42
14.	meets deadlines	18	43	15	33
38.	thorough	34	58	13	30
62.	completes undertakings	17	57	20	27
50.	industrious	31	58	05	33
61.	performs to top of ability	32	37	-01	34
26.	self-disciplined	29	51	03	30
INTELLECTUAL ABILITY					
49.	intellectually quick	52	51	18	25
13.	above average	56	53	11	13
28.	good at analyzing	47	53	23	14
25	good grasp of abstract	44	48	23	20
37.	makes good grades with ease	49	29	15	27
1.	high academic performance	62	52	-02	06
CONFORMITY					
12.	conforming	-15	-08	-13	63
48.	orthodox in behavior	00	07	-21	53
24.	conventional	-24	-25	-13	53
60.	accepts majority values	-11	-05	00	43
72.	has few idiosyncrasies	01	04	-02	36
INTELLECTUAL VALUES					
10.	broad intellectual interests	34	54	31	24
8.	culturally rich	35	48	36	24
46.	reads widely	27	42	29	22
64.	intellectually versatile	43	52	27	18
73.	high intellectual curiosity	44	66	25	12
34.	interested in ideas	30	73	38	00
21.	intellectually mature	40	65	24	07
ETHICALITY					
19.	honest	18	57	11	35
43.	acts ethically	13	48	06	39
67.	principled	13	56	01	32
MOTIVATION					
56.	high motivation to achieve	34	50	06	28
3.	high interest in chosen field	25	45	03	18
70.	a serious student	39	60	17	16
22.	eager to learn	37	69	15	14
68.	values like those of faculty	22	48	10	10
LIKABLENESS					
9.	pleasant	09	56	08	39
29.	likable	10	64	12	34
69.	affable	02	42	12	48
17.	cooperative	09	62	04	17
78.	good sense of humor	02	54	01	24
EXTRAVERSION					
42.	extraverted	-01	44	02	63
6.	gregarious	00	15	01	66
71.	placid	-23	-13	-08	50
63.	optimistic	06	32	11	42
79.	high level of physical energy	12	38	00	23
SELF-SUFFICIENCY/CREATIVITY					
31.	self-directing	31	44	17	28
16.	shows originality	40	59	33	15
4.	imaginative	38	40	31	16
7.	independent	32	47	26	15
52.	creative	34	52	35	16
40.	deep	31	62	20	11
OPEN-MINDEDNESS					
45.	open-minded	19	56	01	27
57.	fair-minded	16	50	14	31
66.	open to new experience	23	49	15	24
77.	generally objective in forming opinions	19	54	05	14
5.	flexible	11	46	14	31
41.	willing to take directions	07	47	11	32
58.	realistic in outlook	19	43	-05	28
33.	willing to ask questions	24	52	16	16
ALTRUISM					
51.	high concern for welfare of others	01	44	10	56
27.	altruistic	06	36	11	54
15.	interested in others	-01	47	11	42
75.	high respect for human dignity	09	57	19	31
MATURITY					
20.	socially mature	11	54	16	41
44.	sophisticated	13	52	08	45
74.	at home in college culture	25	50	14	50
POPULARITY					
30.	leader among peers	11	40	09	56
18.	active in campus life	14	39	07	61
59.	works well with others	25	34	16	54
54.	liked by peers	08	39	10	67
ANXIETY					
11.	serious worries	03	08	-06	50
23.	calm	04	10	-06	48
55.	low need for reassurance	15	15	-03	41
53.	stable	19	32	05	47
39.	happy	04	41	04	47
SELF-INSIGHT					
47.	good self-understanding	13	52	01	30
32.	positive family influence	04	21	10	12
35.	personal goals clear	17	45	04	24
STATUS-CENTEREDNESS					
36.	not status-centered	-05	31	.1	31
76.	low need to stand out	-16	-11	-05	46
76.	modest	-00	32	08	47

Those items loading on neither achievement nor desirability include those under Conformity, Extraversion, Anxiety, and Status-Centeredness (and, to some extent, Popularity). As previously noted, faculty associate these labels more directly with other differences among students than with achievement or desirability.

Although whatever faculty perceive as intellectual ability is related to desirability, it is of particular interest that actual SAT scores (particularly SAT-V) and HSR have negative relationships to desirability apart from achievement. Once achievement is accounted for, the low-standing students on the preadmissions indices are more likely to be viewed as desirable than are the high-standing students, although the coefficients are low. Several factors could account for this. First, as most of the schools in the sample are institutions exercising considerable care and emphasis on selective admissions, it may be that those applicants with low SAT scores who win admission do, in actuality, have other significant compensating features discernible in admissions credentials and in later behavior. Second, it may be that this is a reflection of a faculty value for appearance of achievement beyond the level of the student's intellectual peers. The ratings were made after the fact; it may be that positive values are attributed to students who appear to do better than expected, or negative values to those of high ability who do poorly. Third, these findings may be related to the particular type of institution studied where, with plenty of high-ability applicants to choose from, the traditional admissions criteria have lost some of their appeal to faculty: being "good" on SAT is simply not distinctive. Whatever the cause, this matter deserves further careful study for verification and track-down purposes; for the implication is that although SAT does the usual

job of prediction of performance there is remaining variance that is antithetical to desirability.

The third vector in the analysis shown in Table 4 is placed through SAT-V for examination of the meaning in the faculty mind of scholastic ability separate and apart from desirability and achievement. This would seem to be clearly a test factor for such placement of vector also absorbs the remaining variance in SAT-M.

Loadings of rating-scale items here are generally low, although the highest are related to Intellectual Ability, Intellectual Values, and Creativity. Apparently, there are components of ability, creativity, and intellectual orientation that are recognized as such but which are employed in ways discrepant with achievement or other faculty values.

Residual communality values in Table 5 expose other reliable sources of variance beyond achievement, desirability, and ability. This is most apparent in the items under Conformity, Extraversion, Maturity, Altruism, Popularity, Anxiety, and Status-Centeredness, although altruism, maturity, anxiety, and status-centeredness make some contribution to desirability. Taking all data presented thus far, it would seem safe to say that particularly in extraversion vs. introversion, conformity vs. nonconformity, and popularity with peers, differences among students are perceived, but are not related in the faculty mind with achievement or desirability.

The third diagonal analysis is presented in Table 6. Here, the first two vectors have been placed through SAT-V and GPA, and the third through desirability. Low positive loadings on SAT-V occur, among the ratings, on items under Intellectual Ability and Intellectual Values; other rating-scale item loadings on SAT are inconsequential. The variance in GPA, once that

Factor Loadings: Diagonal Rotation with Varimax Method Through SAT-V (I), GPA (II), and Desirability (III)

Item	Content	I (SAT-V)	II (GPA)	III (SD)
-	SAT-V	75	05	00
-	Freshman GPA	48	55	00
00.	Kind of S institution should admit	07	00	62
-	SAT-M	70	-01	19
-	High School Rank	29	47	-14
DEPENDABILITY				
	1. works steadily	04	07	55
	14. meets deadlines	09	16	49
	18. thorough	14	33	58
	62. completes undertakings	10	14	52
	50. industrious	06	35	56
	61. performs to top of ability	10	15	34
	76. self-disciplined	07	37	45
INTELLECTUAL ABILITY				
	49. intellectually quick	34	43	54
	13. above average ability	28	49	53
	28. good at analyzing	31	36	58
	05. good grasp of abstract	34	37	53
	37. makes good grades with ease	33	36	32
	1. high academic performance	23	62	46
CONFORMITY				
	12. conforming	-16	-05	-13
	48. orthodox in behavior	-17	-15	-07
	4. conventional	-17	-17	-28
	26. accepts majority values	-06	-19	-04
	47. lose few idiosyncrasies	-07	08	21
INTELLECTUAL VALUES				
	16. broad intellectual interests	26	31	62
	8. culturally rich	25	07	58
	42. reads widely	29	13	51
	45. intellectually versatile	21	27	56
	43. high intellectual curiosity	23	31	69
	34. interested in ideas	20	17	63
	44. intellectually mature	14	53	59
ETHICALITY				
	19. honest	02	04	37
	23. acts ethically	04	19	47
	67. principled	06	11	60
MOTIVATION				
	56. high motivation to achieve	19	35	48
	3. high interest in chosen field	05	19	42
	20. a serious student	27	34	63
	9. eager to learn	24	36	70
	68. values like those of faculty	07	13	48
LIKABLENESS				
	5. pleasant	-05	05	55
	29. likable	-04	17	64
	65. affable	-03	09	43
	15. cooperative	04	08	60
	39. good sense of humor	21	07	59
EXTRAVERSION				
	42. extroverted	-04	09	14
	6. gregarious	-03	03	-14
	71. placid	-17	-16	-15
	63. optimistic	06	06	34
	79. high level of physical energy	-02	19	35
SELF-SUFFICIENCY/CREATIVITY				
	31. self-directing	16	05	45
	12. shows originality	32	26	62
	4. imaginative	09	08	38
	7. independent	25	21	54
	53. creative	21	06	65
	40. deep	16	37	55
OPEN-MINDEDNESS				
	45. open-minded	10	17	60
	27. fair-minded	05	17	52
	69. open to new experience	10	21	51
	77. generally objective in forming opinions	-07	08	31
	2. flexible	07	09	50
	41. willing to take directions	01	17	28
	58. realistic in outlook	-04	06	3
	33. willing to ask questions	19	17	56
ALTRUISM				
	51. high concern for welfare of others	-05	02	45
	57. altruistic	01	07	37
	15. interested in others	-07	05	43
	75. high respect for human dignity	02	10	50
MATURITY				
	72. socially mature	23	17	54
	44. sophisticated	24	19	38
	74. at home in college culture	17	19	21
POPULARITY				
	32. leader among peers	05	17	35
	17. active in campus life	-04	10	26
	11. works well with others	19	24	37
	64. liked by peers	01	10	40
ANXIETY				
	10. seldom worries	-04	08	05
	73. calm	-06	11	13
	55. low need for reassurance	04	17	19
	53. stable	05	21	37
	35. happy	-09	11	30
SELF- ESTEEM				
	47. good self-understanding	08	21	51
	52. positive family influence	08	-01	25
	54. personal goals clear	07	29	43
STATUS-CENTEREDNESS				
	59. not status-centered	-04	-09	34
	24. low need to stand out	-08	-09	-12
	70. modest	-09	19	35

attributable to SAT-V is removed, appears in faculty eyes to be a matter of their perception of the student's Intellectual Ability, Dependability, Intellectual Values, Motivation, and Self-Sufficiency/Creativity. This would, of course, be more significant had these faculty ratings somehow been based on teaching contact before the students had established grade achievement levels, rather than after the students' grade performance levels had become available. However, each of these areas produce higher loadings in general on desirability as the third factor than on GPA apart from SAT.

The loadings on the third factor, desirability separate and apart from SAT-V and GPA, fall about as would be predicted from the previous factorings. Since SAT-V is positively related to grades, but negatively related to desirability apart from grades, the effect is to raise slightly across the board the loadings of rating-scale items on desirability apart from grades and SAT over those in Table 5 (as the item loadings on GPA have been lowered in comparison with those in Table 5).

Limitations

Several important limitations of this study should be noted. First, the analysis of the rating-scale data involves single items, with resultant limitations of reliability; this would seem particularly crucial in the case of the desirability criterion.

Second, the study employs ratings of traits as faculty would describe them rather than carefully designed behavioral observation techniques. The real meaning of the opinionable labels can indeed be questioned: Is "conformity" a matter of dress and grooming, or intellectual style? Is open-mindedness an ability to receive and adapt to new stimuli, or a rigorous

adherence to one (say, the faculty) point of view? Another aspect of this difficulty has to do with the possibility that the apparent interrelationships among traits really define word meanings rather than yield any real insight into constructs associated with desirability. In this respect, for example, one might argue that "likableness" is a synonym rather than a concomitant of desirability. The implication of these possibilities is that further exploration of the behavioral events associated with the opinionable or judgmental labels involved is necessary, even prerequisite to the more crucial but obvious ethical question of selection on personal characteristics bases.

Third, there are limitations that stem from the nature and restrictions of the sample. The most obvious has to do with the limited range of institutions, students, and faculty which could affect both the material for judgment as well as the value systems applied. The Vassar studies (see Brown, 1962, p. 541) suggest areas not coming to the surface in this study (e.g., "growth during college," "specific skills"). Certainly it is reasonable to assume that for other levels of students, or for schools of strong vocational or pragmatic bent, other areas or structures of concern might appear.

Fourth, there is evidence that faculty have limited personal knowledge of, or individual contact with, students. The large number of "unknown" responses, the proportions of faculty stating inability to rate, or, for that matter, the absence of some kinds of qualities (e.g., traits reflecting specific growth over time) indicate that, on the whole, faculty contact with students may be relatively casual for the purposes of this study. The typical college teaching situation may not permit much knowledge of students

except in unusual individual cases where a single student is highly visible for some reason, or where a faculty member goes beyond the dictates of the classroom.

Nevertheless, accepting these limitations as reason for caution or for restricting generalizations that might otherwise be drawn, there is clear evidence that although faculty define desirability primarily in terms of academic interest, ability, and performance, there are elements of desirability separate and apart from grade achievement, and that SAT, at the very least and for the institutions studied, is not positively related to desirability beyond its contribution to prediction of grades.

Summary

An 80-item rating scale, drawn from language faculty use in describing students, was completed by 407 faculty for 398 students (yielding 606 sets of ratings) in eight institutions. The items (including a criterion item expressing general desirability), together with SAT scores, high school rank, and freshman grade-point average, were correlated and factored by the diagonal method to permit analysis of the reliable variance in grades, desirability, and desirability apart from grades.

Variance in desirability beyond that attributable to level of academic performance was found. The rating-scale items related to desirability apart from grades deal with Likableness, Ethicality, Open-Mindedness, Altruism, Maturity, and Self-Insight.

Desirability is also a matter of faculty-perceived intellectual ability (including creativity) and values; although these are related to academic

performance there is further substantial variance that is part of the formulation of the desirable student. The SAT, however, contributes negatively (if at all) to desirability apart from grades.

The fact that ratings involved opinionable labels to a greater extent than specific behavioral events was noted, and it was concluded that further study should incorporate student behavior from which faculty form their opinions or conclusions rather than from labels alone. Such would be a next step in elaborating, justifying, and measuring the underlying traits in working toward their validation and ultimate employment as working criteria.

References

Brown, D. R. Personality, college environment and academic productivity. In N. Sanford (Ed.), The American college. New York: Wiley, 1962. Pp. 536-562.

Davis, J. A. Faculty perceptions of students: I. The development of the Student Rating Form. Research Bulletin 64-10. Princeton, N. J.: Educational Testing Service, 1964. (a)

Davis, J. A. Faculty perceptions of students: III. Structure of faculty characterizations. Research Bulletin 64-12. Princeton, N. J.: Educational Testing Service, 1964. (b)

Fishman, J. A., & Pasanella, A. K. College admission-selection studies. Rev. educ. Res., 1960, 30, 298-310.

Frederiksen, N. The evaluation of personal and social qualities. In College Admissions. New York: CEEB, 1954. Pp. 93-109.

Harris, D. Factors affecting college grades: A review of the literature, 1930-37. Psychol. Bull., 1940, 37, 125-166.

Thurstone, L. I. Multiple-factor analysis. Chicago: Univer. Chicago Press, 1947. Pp. 101-110.