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ABSTRACT

To determine whether it is necessary for eight College Research Center (CRC) member colleges to use 16 distinct sets of weight in combining four admissions tests scores into predictive composities, a standard set of weights were developed and tested for effectiveness in predicting Freshman Average Grade (FAG). The basic sample in which weights were derived were women entering CRC-member colleges in Fall 1965; complete data were available for 2,523. Within each college, students with complete data were crdered from high to low with regard to FAG, and those in the upper and lower 27% were assigned to High Achieveing and Low Achieving groups, respectively. A multiple discriminant analysis resulted in four discriminant functions: the principal discriminant function exhausted approximately 91% of the discriminating power provided by the four test scores, with raw-score weighting as follows: .22 (SAT-V) + .13 (SAT-M) + .62 (Rank) + .74 (Ach Av); the second function accounted for an additional 6%, with raw-score weightings as follows: .44 (SAT-V) + .23 (SAT-M) + .20 (Rank) - .84 (Ach Av). Means and standard deviations of the two discriminant scores for each of the 16 college/level of achievement scores are tabulated. Results indicate that, within each college/school-type subgroup, a composite score based on application of a standard set of weights to the four admission scores correlates as highly with FAG as composites based on group-specific weights for the respective subgroups. (DB)

COLLEGE RESEARCH CENTER

For Interinstitutional Cooperation in Institutional Research

In affiliation with
EDUCATIONAL TESTING SERVICE

THE UTILITY OF A STANDARD COMPOSITE FOR PREDICTING FRESHMAN AVERAGE GRADE IN EIGHT LIBERAL ARTS COLLEGES

CRC Memorandum
June 25, 1971

Kenneth M. Wilson

The Utility of a Standard Composite for Predicting Freshman Average Grade in Eight Liberal Arts Colleges

by

Kenneth M. Wilson
College Research Center

Member-colleges of College Research Center use a common battery of admissions variables, as follows:

Scholastic Aptitude Test--Verbal (SAT-V),

Scholastic Aptitude Test--Mathematical (SAT-M),

Converted Secondary School Rank (Rank),

Average of CEEB Achievement Tests (AchAv).

As a result of studies conducted during the past several years, a considerable amount of information is available regarding the utility of these variables, singly and collectively, for forecasting student performance as measured by Freshman Average Grade or as reflected in senior-level scores on Graduate Record Examinations in various fields of study.*

A major purpose of these studies has been to develop, and periodically update, two "equations" or "formulae" for each college, one designed to yield a predicted Freshman Average for candidates from private secondary schools and the other a prediction for public-school candidates. In all cases these equations have reflected the most effective weighting of the four admissions scores for each college's candidate subgroups--i.e., unique group-specific weights have been used.**

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*For a recent analysis of studies dealing with the prediction of Freshman Average Grade, see Kenneth M. Wilson, "Contribution of SAT's to Prediction of Freshman Grades CRC-Member Colleges," (CRC: 8 May 1970); additional perspective on this topic is provided in an earlier report entitled "Review of CRC Studies: III--Validity of a Measure of Academic Motivation," (CRC: 13 June 1966). The validity of freshman-level admissions scores for predicting college-senior level scores on GRE Advanced Tests in 13 subject areas is reported in Kenneth M. Wilson, "Predicting Cognitive Performance in Different Colleges: Toward the Use of an Expected Output Dimension in Educational Evaluation," (CRC: 28 December 1970).

**Weights have been determined by application of the method of multiple regression analysis to data for public- and private-school subgroups in each college.

Thus, for eight CRC-member colleges, each with both public- and private-school-candidate subgroups, 16 distinct sets of weights have been used in combining the four admissions scores into predictive composites.

Are 16 Sets of Weights Necessary?

Since CRC-member colleges are similar in a number of ways--e.g., they are traditionally for women only; they offer similar liberal arts curricula; and they are selective institutions, though differing in degree of selectivity--it is reasonable to ask whether or not, and if so to what extent, accuracy of prediction of first-year grades actually is improved by the use of unique group-specific sets of weights for the admissions scores. Conversely, we may ask whether a single composite of these scores--i.e., one based on a standard set of weights--might not correlate as highly with Freshman Average Grade within each college/school-type subgroup as the composites resulting from application of the group-specific weights.

This memorandum reports the principal findings of a study designed to explore this question. Results indicate that, within each college/school-type subgroup, a composite score based on application of a standard set of weights to the four admissions scores correlates as highly with FAG as composites based on group-specific weights for the respective subgroups.

Findings in Brief

The standard set of weights developed in this study, and an illustrative application of the weights in calculation of a standard composite of the admissions variables, are shown below:

Variable	Weight	Illustrative example				
		Score on variable	(times)	Weight	=	Weighted score
SAT-Verbal	.22	70	x	.22	=	15.40
SAT-Math	.13	60	x	.13	=	10.80
Conv. Rank	.62	65	x	.62	=	40.30
CEEB AchAv	.74	62	x	.74	=	45.88
Standard composite		= Sum of weighted scores			=	112.38

Thus, in this particular illustration, a composite score of 112.38, or 112, results from application of the weights.

Data available for the Class entering in 1966 were used to determine for each of 16 subgroups--public and private school graduates in each of eight colleges--the correlation between Freshman Average Grade and this standard composite of the admissions variables on the one hand and, on the other, between Freshman Average Grade and group-specific composites of the same admissions data, namely, Predicted Freshman Average Grade based on predictive equations uniquely determined for the respective college/school-type groups.

Results of the correlational analysis are summarized in Table 1. It is clear from the correlational data, obtained under conditions of cross-validation,* that:

1. validity coefficients for the standard composite and those for the group-specific formulae are of the same order of magnitude;
2. however, in more than half the comparisons the standard composite proved to be slightly more valid than the group-specific composite.

Thus, with regard to the question which gave rise to this study, based on the evidence at hand, it is an appropriate conclusion that 16 group-specific sets of weights for the four admissions variables do <u>not</u> yield predictions of Freshman Average Grade for the 16 college/school-type groups involved which are more accurate, correlationally speaking, than those yielded by a standard composite of the admissions variables.

Having seen that a standard composite of the four admissions scores is as effective as group-specific composites for predicting grades in several groups, we may now examine in greater detail the procedures employed in identifying the standard set of weights and examine additional findings which shed light on the basic results reported in Table 1.

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*Group-specific formulae (i.e., weights for the admissions scores) were determined in analyses of data for an earlier class, as were the weights for the standard composite. In both cases, weights were applied to data for samples other than those in which they were initially derived; hence they were <u>cross-validated</u>.

Table 1

Comparison of Validity Coefficients for Freshman Average Grade Versus a Four-Variable Admissions Battery, under Conditions of Unique Group-Specific Weighting and Standard Weighting, Respectively, in Subgroups Defined in Terms of Type of Secondary School Attended by a Student, Eight Liberal Arts Colleges, Freshmen Women Entering in 1966

College	Correlation of composite with FAG, under cross-validation, with			
	Group-specific multiple regression weights		Standard weights	
	Public sch. grads.	Private sch. grads.	Public sch. grads.	Private sch. grads.
Mount Holyoke	.52	.56	.56	.63
Hollins	.58	.38	.60	.39
Randolph-Macon Woman's	.55	.58	.54	.56
Trinity	*	.49	.59	.53
Briarcliff	.36	.36	.39	.38
Vassar	.38	.24	.38	.28
Connecticut	.24	.33	.26	.29
Wheaton	.36	.39	.32	.41

*This sample of public school graduates was not identical with that in which standard weights were cross-validated.

Sample, Basic Data, and Study Procedures

The standard set of weights tested in this study for effectiveness in predicting Freshman Average Grade was derived by analyzing differences in the admissions-score patterns of 16 college/level-of-achievement groups--i.e., groups of high-achieving and low-achieving freshman women at eight CRC-member colleges, members of the Class entering in 1965.

More specifically, students (women) entering CRC-member colleges in the fall, 1965, as first-time enrolled freshmen, and for whom a complete set of data (admissions scores and a Freshman Average Grade) was available, constitute the basic sample in which weights were derived. Of 2,816 entering students, complete data were available for 2,523. Within each college, students with complete data were ordered from high to low with regard to Freshman Average Grade and those with grades in the upper and lower 27 percent of the FAG distribution were assigned respectively to High-Achieving and Low-Achieving groups, with results as shown in Table 2.

Examination of the mean values of the basic admissions variables for the several groups, as defined and summarized in Table 3, reveals that:

(a) freshmen in the upper 27% of the grade distribution at each college have higher averages on the admissions variables than freshmen in the lower 27%;

(b) there are differences among the colleges in regard to the level of admissions scores associated with the "high- and low-achieving" groups (and, of course, by inference in the level of admissions scores of all entering freshmen); on the average, high-achieving freshmen at some colleges have lower admissions scores than low-achieving freshmen at others, and vice versa.

Thus, variation among the 16 college/level-of-achievement groups with respect to the several admissions variables is attributable in part to the relationship of the admissions scores to performance (i.e., differences between high- and low-achieving groups within each college) and in part to the selectivity level of the colleges (i.e., differences in the score distributions of students entering the respective colleges).

Table 2

Description of the Sample of High- and Low-Achieving Freshmen Women, Class Entering in 1965, Eight CRC-Member Colleges

College	All 1965 entrants: Total (N)	No data (N)	With data (N)	Entrants with complete data: Lower 27%-- FAG range	(N)	Upper 27%-- FAG range	(N)
Mount Holyoke	512	64	448	3.80 - 7.00	(121)	8.50 - 11.80	(121)
Hollins	338	49	289	0.50 - 1.40	(78)	2.00 - 2.80	(78)
Randolph-Macon Woman's	288	32	256	0.11 - 1.19	(69)	1.84 - 3.00	(69)
Trinity	318	16	302	0.38 - 1.25	(82)	2.00 - 3.25	(82)
Briarcliff	254	30	224	0.61 - 2.22	(60)	2.76 - 3.68	(60)
Vassar	433	41	392	1.50 - 2.40	(106)	2.90 - 3.60	(106)
Connecticut	362	28	334	1.25 - 2.13	(90)	2.66 - 3.88	(90)
Wheaton	311	33	278	0.90 - 6.80	(75)	8.50 - 11.00	(75)
All Colleges	2816	293	2523		(681)		(681)

Table 3

Average Scores on Basic Admissions Variable for High- and Low-Achieving Freshmen Women (Upper- and Lower-27% in Terms of Freshmen Average Grade), Eight CRC-Member College, Class Entering in 1965

College	SAT-V Upper 27% FAG	SAT-V Lower 27% FAG	SAT-M Upper 27% FAG	SAT-M Lower 27% FAG	Rank Upper 27% FAG	Rank Lower 27% FAG	AchAv Upper 27% FAG	AchAv Lower 27% FAG
Mount Holyoke	66.0	61.5	65.6	62.4	71.7	65.0	66.4	62.0
Hollins	60.5	56.3	58.7	55.7	64.1	54.8	59.6	53.8
Randolph-Macon Woman's	59.8	56.6	59.8	55.3	66.0	60.3	59.6	54.0
Trinity	63.7	59.4	62.2	54.5	68.2	57.4	60.9	53.0
Briarcliff	53.0	49.5	49.3	47.2	54.2	45.6	53.5	49.7
Vassar	66.4	63.1	63.0	62.3	69.9	64.5	63.1	60.9
Connecticut	63.3	62.2	62.7	61.4	66.1	61.3	63.3	61.7
Wheaton	61.3	59.5	59.7	58.0	66.1	60.5	62.0	58.0

Given the objectives of the study, it is important to know how many linear combinations of the four admissions scores are required to account for differences among the several college/level-of-achievement groups.

If one linear combination is sufficient to account for all or essentially all of the observed score-differences among the 16 groups, we may infer:

(a) the existence of a continuum of "academic performance potential" having similar meaning for all the colleges involved,

(b) a hierarchical arrangement of institutions along this continuum with regard to the characteristic level of their student input, and

(c) the existence of one necessary condition for the tenability of the hypothesis that a standard composite of the four admissions scores might have utility for predicting student performance in all the colleges.

Multiple Discriminant Analysis*

In this connection, the method of multiple discriminant analysis is appropriate. Multiple discriminant analysis (MDA) is a method for analyzing differences among several groups with respect to multiple test scores in order to determine the number of linear functions (combinations) of the scores which is required to account for observed group-differences, and to weight the tests in such a way as to exhaust their predictive power for distinguishing among the several groups involved. More specifically, given several test scores on individuals in three or more groups, the method of multiple discriminant analysis (MDA) involves derivation of the two or more mutually uncorrelated linear functions (weighted combinations or composites), called discriminant functions, of the several test scores which will most effectively discriminate the groups.

When the number of groups is less than the number of tests, the maximum number of discriminant functions is one less than the number of groups. When the number of groups is greater than the number of tests, the maximum number of linear discriminant functions is equal to the number of tests.

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*See William W. Cooley & Paul R. Lohnes. Multivariate Procedures for the Behavioral Sciences. New York: John Wiley & Sons, 1962. Pp. 116-133.

Functions are derived successively in such a way that the first or principal function accounts for the highest proportion of the discriminating capacity of the test battery involved; the second function accounts for the second highest proportion, etc.

Differences among College/Level-of-Achievement Groups: Results of the MDA

Given four test scores on students in the 16 college/level-of-achievement groups, four discriminant functions were derived.

1. The first or <u>principal discriminant function</u> exhausted approximately 91 percent of the discriminating power provided by the four test scores, with raw-score weighting as follows:
   .22 (SAT-V) + .13 (SAT-M) + .62 (Rank) + .74 (AchAv).
2. The second function accounted for an additional 6 percent of the discriminating power provided by the four test scores, with raw-score weighting as follows:
   .44 (SAT-V) + .23 (SAT-M) + .20 (Rank) - .84 (AchAv).

Individuals or groups with higher scores on the test battery, as a whole, but especially Rank and the Average of CEEB Achievements, will have higher scores on the first discriminant; the opposite will be true for individuals or groups with lower scores on the test battery. However, when the second discriminant is considered, higher scores will be associated with individuals or groups whose measured achievement (i.e., CEEB Achievement Average) is low relative to their SAT scores and Rank, while lower scores are associated with individuals or groups whose measured achievement is high relative to SAT scores and Rank. This reflects the fact that AchAv has a high negative weight on this discriminant, while the other three tests have positive weights.

Means and standard deviations of the two discriminant scores for each of the 16 college/level-of-achievement scores are shown in Table 4. The two mean values for each group provided a basis for locating the group in a two-dimensional graph (Figure 1) in which the major or vertical axis represents differences in scores on the first discriminant and the horizontal axis represents differences in scores on the second discriminant.

Table 4

Means and Standard Deviations of the Sixteen College/Level-of-Achievement Groups on Two Discriminant Functions of Four Admissions Variables

College	First discriminant*				Second discriminant**			
	High ach		Low ach		High ach		Low ach	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Mount Holyoke	117.0	5.8	108.2	5.4	2.4	3.5	2.0	3.5
Hollins	105.1	7.6	93.7	5.8	2.6	4.4	3.1	4.6
Randolph-Macon Woman's	106.2	8.1	97.3	7.1	3.0	3.4	4.1	3.9
Trinity	109.7	8.1	95.2	7.3	4.5	4.0	5.4	4.1
Briarcliff	91.5	7.5	82.3	5.0	0.4	4.5	-0.2	3.8
Vassar	115.9	6.3	109.1	5.3	1.4	3.1	1.7	4.0
Connecticut	110.2	6.8	105.6	5.3	2.1	3.9	1.6	3.7
Wheaton	108.4	6.7	101.3	6.0	1.6	4.4	2.7	4.0

*.22 SAT-V + .13 SAT-M + .62 Rank + .74 Ach Av = First discriminant

**.44 SAT-V + .23 SAT-M + .20 Rank - .84 Ach Av = Second discriminant

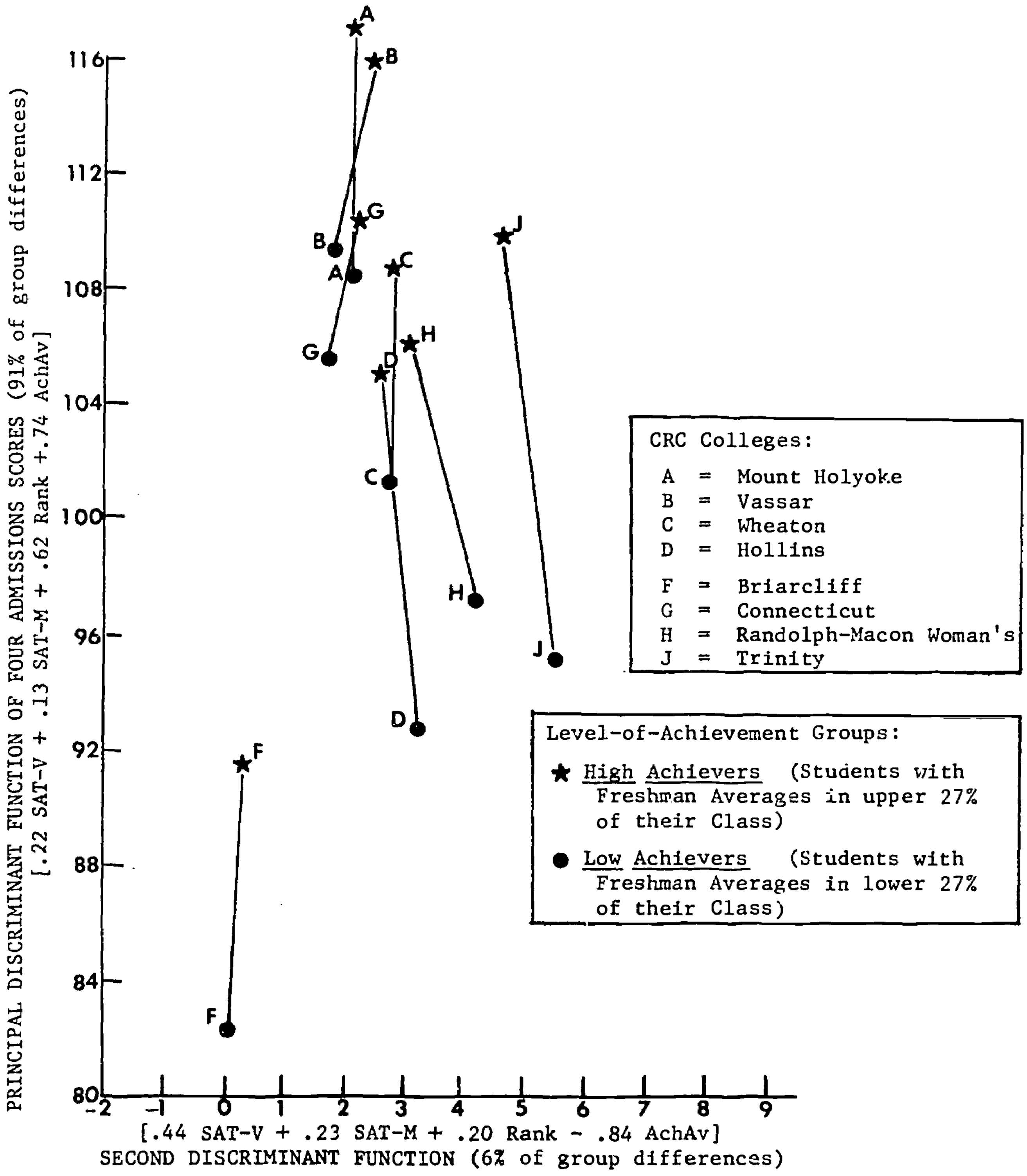

Figure 1. Differences among High- and Low-Achieving Groups of Freshmen Women in Eight Liberal Arts Colleges, with Respect to Two Uncorrelated Linear Functions (Weighted Combinations of Four Admissions Scores) Which Yield the Most Efficient Discrimination among the Sixteen College/Level-of-Achievement Groups Involved

Points representing the high-achieving and low-achieving freshman groups at each college (stars and circles, respectively), with positions determined by their average scores on the two discriminant functions, are connected by a line. (It is assumed that a point representing the position for all entering freshmen at each college would be located approximately at the midpoint of each line.)

1. Differences in the lengths of the eight lines reflect differences in the degree of separation of upper- and lower-27% groups at the various colleges.
2. Most of the predictive power of the test battery for differentiating high- and low-achievement groups, as well as colleges, is concentrated in the first discriminant function.
3. Departure of lines from the vertical suggests that a limited amount of information of value for discriminating among high- and low-achievement groups may also be contained in the second discriminant function.*
4. However, the second discriminant function, which accounts for only 6 percent of the total discriminating capacity of the test battery, is providing information about the test-score patterns of students entering the respective colleges--i.e., information which discriminates <u>between colleges</u>, primarily between College J, with the highest mean on this discriminant function, and College F, with the lowest mean. The high mean for College J (to the far right in Figure 1) reflects the fact that the measured achievement (i.e., the CEEB Achievement Average) of entering students is low relative to their secondary-school rank and SAT scores, while in the case of College F (to the far left in Figure 1) measured achievement is high relative to Rank and SAT's.**

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*It should be kept in mind that the two discriminant scores are uncorrelated --i.e., scores on the principal discriminant function are independent of scores on the second.

**College F's Class of '69 contained a relatively high proportion of middle-of-the-class graduates of selective, independent secondary schools, while College J's Class of '69 contained a high proportion of higher-ranking girls from church-related secondary schools which were less selective.

Some Related Findings

Results of the multiple discriminant analysis suggested that a single composite of the four admissions tests would have utility for the prediction of grades at each college--i.e., that a continuum of "academic-performance potential" with similar meaning for all the colleges in this study is specified by the first discriminant function of the four admissions scores.

Thus, in this way, the set of weights described at the outset as specifying a "standard composite" of the four admissions scores was developed. And, the comparability of the correlational validity of this standard composite and that of composites based on uniquely determined group-specific weights for the four tests has been established empirically for public- and private-school subgroups in each college, under conditions of cross-validation, with Freshman Average Grade as the criterion (see Table 1).

The fact that the standard composite correlates as highly as the group-specific composites with Freshman Average Grade suggests (a) that the several sets of weights derived by analyzing the relationship of the test battery to FAG within each college/school-type subgroup have been and are similar, (b) that the standard composite is highly correlated with the respective group-specific composites, and (c) that they in turn are highly correlated with each other. These conditions hold for the CRC data.

In an analysis (in progress) of data for seniors in the Class graduating in 1970 (survivors of the freshmen entering in 1966 whose first-year records provided the basis for cross-validation of the respective composites) correlations were obtained between Predicted Freshman Average Grade (based on group-specific formulae) and the standard composite for public- and private-school-graduate subgroups in each of five colleges, with results as shown below:

	Simple correlation between the standard composite and a group-specific composite for	
College	Public-school grads	Private-school grads
Connecticut	.99	.99
Hollins	.98	.97
Mount Holyoke	.98	.99
Randolph-Macon Woman's	.99	.99
Wheaton	.97	.95

Thus, there is a very high degree of correlation between the standard composite and the respective group-specific composites, and by inference among all the predictive composites involved, despite some differences in the specific weights as suggested by the data in Table 5.

Consistent with expectation, there are strong similarities between the patterns of weights for the standard composite and averages of the sets of uniquely determined weights for the respective college/school-type groups. It has long been recognized that in assigning weights to variables for purposes of prediction, considerable fluctuation in the magnitudes of the weights is possible without having an appreciable effect on the correlation of a composite with a criterion variable.

It is of incidental interest to note that the unique prediction formulae (which weight the tests so as to maximize their correlation with Freshman Average Grade) specify negative weighting for SAT-Mathematical scores, while the standard formula (which weights the test battery so as to discriminate most efficiently among college/level-of-achievement groups) gives a positive weight to this variable. Because of the difficulties which arise in attempting to rationalize assignment of a negative weight to a measure of scholastic aptitude in order to maximize its contribution to prediction of grades in college, the standard weighting is preferable.*

Some Implications

The results of this study have some practical implications for the colleges involved, of course. In the most obvious case, study findings indicate that a standard set of weights does provide a practicable basis for summarizing the predictive information in the four admissions scores under consideration. The standard composite--which we may term a general Academic Qualifications Index (AQI)--can be used in a variety of ways: e.g., to generate a prediction of freshman grades, to monitor the level of academic performance-potential in

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*The fact that SAT-M acts as a suppressor variable in prediction formulae for CRC-member colleges (i.e., takes on a negative weight when included in a battery with the CEEB Achievement Average) and that its contribution is relatively slight, as well as the problem of rationalizing this type of interaction, are discussed in "Contribution of SAT's to Prediction of Freshman Grades CRC-Member Colleges," Wilson, op. cit.

Table 5

Comparison of the Standard Weights for Four Admissions Variables as Derived in the Present Study, with Uniquely Determined, Group-Specific Weights for These Variables as Derived in Previously Reported CRC Studies in the Prediction of Academic Performance

Type of weight	Admissions variables			
	SAT-V	SAT-M	Rank	AchAv
STANDARD COMPOSITE				
Raw-score weight[a]	.22	.13	.62	.74
Raw-score weight (conventionalized)[b]	.30	.18	.84	1.00
Scaled weight[c] (conventionalized)	.31	.24	1.00	.87
GROUP-SPECIFIC COMPOSITES[d] (conventionalized)				
Raw-score weight: Public	.15	-.16	.92	1.00
Raw-score weight: Private	.11	-.14	.62	1.00
Scaled weight: Public	.18	-.06	1.00	.79
Scaled weight: Private	.16	-.12	1.00	.78

[a]"Raw-score weights" are applicable to the original or raw-scores on the tests and have been adjusted to take account of differences in the scales or metrics of the tests. They do not normally indicate directly the relative contribution of the tests to a given composite.

[b]Conventionalized weights are those in a set in which each weight has been expressed as a proportion of the largest weight. Thus, in this case, the raw-score weights in the first row have been divided through by .74 (weight for AchAv). This treatment of weights does not affect their relative contribution but permits easier comparison of one set of weights with another.

[c]"Scaled-weights" permit inferences regarding the relative contribution of several tests to a composite when all tests are expressed in the same scale or metric. Thus, for example, Rank actually contributes somewhat more to the standard composite than AchAv although the raw-score weight for Rank is somewhat less than that for AchAv to compensate for differences in their scales.

[d]The raw-score weights reported here are the conventionalized averages of weights for eight public- and eight private-school samples, respectively, entering CRC-member colleges in 1966. The scaled weights are the averages of standard-score regression (or beta) weights derived in 22 public- and 22 private-school samples, respectively, as reported in Table 4 of "Contribution of SAT's to Prediction of Freshman Grades in CRC-Member Colleges," op. cit.

successive candidate or enrolled groups, or to make interinstitutional analyses of student input.*

In addition, data such as shown in Figure 1 regarding the characteristics of high- and low-achieving freshmen at different colleges could profitably be considered by members of the college faculty generally, as well as by members of admissions committees, in discussing policies related to grades and grading, the meaning of institutional "standards," or similar educational matters.

In a broader context, as agencies concerned with college-admissions testing introduce central systems for assessing the academic-performance potential of candidates with respect to many different colleges, it will be both feasible and desirable to conduct wide-scale multi-institutional studies designed to identify groups of colleges for which a given AQI (standard composite of a specified admissions battery) is as effective as group-specific predictive composites for forecasting student performance.

Moreover, by analyzing differences among college/level-of-achievement groups such as those defined in the present study, using the method of multiple discriminant analysis, given large samples of colleges or types of college programs and specified sets of admissions-test scores applicable for all participants in such colleges, it will be possible (a) to determine the number of different composites of the admissions tests required to account for differences among the groups, (b) to study the utility of these composites for predicting performance, and (c) to identify groups of colleges for which specified composites have similar "meaning."

In more general terms, this study was made possible by a continuing program of interinstitutional cooperation among a small number of colleges in studies of the characteristics of entering students and of the relationship of these characteristics to specific criteria of student progress. Expanded programs of interinstitutional cooperation in institutional research are needed in order to provide reliable information for all colleges to use in educational planning and institutional evaluation.

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*A table of normative data for the Academic Qualifications Index is appended. Based on over 2,500 women entering CRC-member colleges in Fall, 1966, this table indicates the percentage of students with AQI values lower than each of several designated values--i.e., provides percentile ranks for the respective AQI values.

APPENDIX A

Norms for the Academic Qualifications Index: Freshmen Women Entering CRC-member Colleges Fall 1966

Academic Qualifications Index	Percentile rank	Academic Qualifications Index	Percentile rank
125	98	106	36
124	97	105	41
123	96	104	37
122	95	103	33
121	94	102	29
120	93	101	25
119	91	100	22
118	89	99	19
117	87	98	16
116	84	97	13
115	81	96	11
114	78	95	09
113	75	94	07
112	71	93	06
111	67	92	05
110	63	91	04
109	59	90	03
108	54	89	02
107	50	88	02

Note: the Academic Qualifications Index is computed as follows: .22 SAT-V + .13 SAT-M + .62 Converted Rank + .74 CEEB Ach Average. This table shows the percentage of entering students in 1966 estimated to have AQI lower than the values tabled. Thus, for example, an AQI of 112 is higher than that for approximately 71 percent of all freshmen entering CRC-member colleges in 1966.