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ABSTRACT

A "two-pool" method developed to increase the opportunities of minority students for admission into restricted enrollment programs at Tallahassee Community College is presented in this report. Three matrices were created by matching a sample of student grade point averages against a sample of student scores on the School and College Aptitude Test (Verbal and Quantitative) and the Florida Twelfth Grade Test. Thus, for any given test score, the percentage of students achieving grades of "C" or better could be readily determined, and the minimum test scores associated with a specified percentage of student academic success could be identified. A selected cut-off score would then provide a minimum standard by which a student applicant could be deemed "fully qualified" for admission. Two applicant pools, one of minority applicants and one of majority applicants, would be created and the top "fully qualified" applicants in each pool admitted in proportion to their representation in the general student body. While some minority applicants selected might have lower absolute scores than majority applicants not selected, all would have a probability of success. Before this method could be implemented, the decision in Bakke v. Regents of the University of California was announced, which precluded its use. Alternatives are suggested. (JDS)

OFFICE OF INSTITUTIONAL RESEARCH

tallahassee community college

Testing for Restricted Enrollment Programs

A D D E N D U M

December 30, 1976

"The best laid plans..."

Data for this study were collected in March of 1976 and refined over the summer and by the end of summer the idea of a "Two Pool" system from which to draw minority and majority applicants had been developed. The paper was written and released during the first week in December in time for presentation at the College Entrance Examination Board Workshop held in Gainesville, Florida early in January, 1977.

The roof fell in on December 22, 1976...

We received a copy of "Reverse Discrimination", the case of BAKKE v. REGENTS OF THE UNIVERSITY OF CALIFORNIA, 132 California Reporter 680, (Supreme Court of California) September 16, 1976.

Administrators at the Davis California campus of the University of California were faced with the problem of admitting minority students in the Medical School. The magnitude of their problem is illustrated when one learns there were 2,644 applicants for admission to the 1973 class and 3,737 applications in 1974 to fill only 100 vacancies each year.

Two separate applications were developed by the university: one for majority (White race) and one for minority (all other races). In the two years prior to institution of this program there were only two blacks and one Mexican-American who qualified for entrance while during the four year operation of the program there were 26 blacks, 33 Mexican-Americans and one American Indian who were admitted.

Applicants were judged on multiple criteria for both minority and majority programs. The single most obvious difference between the programs, and the one upon which Mr. Bakke rested his suit, was a requirement in the majority program for a minimum grade point average of 2.5 while in the minority program some were accepted as low as 2.1: Mr. Bakke had a GPA of 3.51. All applicants had to be "fully qualified" in order to be considered. (To this point there is a remarkable similarity between the Davis program and the "Two Pool" system recommended by my study.)

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Mr. Allen Bakke was an unsuccessful applicant for admission to the Medical School at University of California at Davis, California and he brought action challenging the constitutionality of special admissions programs benefiting disadvantaged minority students. On September 16, 1976, by a split decision, the California Supreme Court found in his favor and declared the two application program unconstitutional. Their logic was to the effect that although both groups were "fully qualified", the university had afforded preference on the basis of race to persons who, by the university's own standards, were not as qualified. The key words here appear to be, "as qualified".

I had recognized in my paper that, "Although there will still be some applicants remaining in the majority pool who were not selected even though they had scores higher than those selected from the minority pool, minimum standards were not lowered and all have a probability of success." Recognition of a fault neither corrects nor excuses it. We, at this college, will of course not put the two pool system into use.

It is still possible however to use multiple criteria for selection of candidates from applicants. A weighted system can be developed in which points are awarded for various criteria and the total of these points for each applicant ranked from high number of points to low, with selection made from the top down as far as needed. An outline example of such a system could be:

X points for every 10 SCATV scores above 30	xx
X points for every 10 SCATQ scores above 20	xx
X points for every 50 FLA12 scores above 200	xx
X points for every .1 grade points above 2.0	xx
X points for acceptable experiences	xx
X points for interview rating	xx
X points for other criteria	xx
TOTAL POINTS	XXX

I do not feel the study was a complete loss as some quite useful relationships were discovered between test scores and grade point averages earned under different circumstances.

I recommend to each of you, as good professional reading,

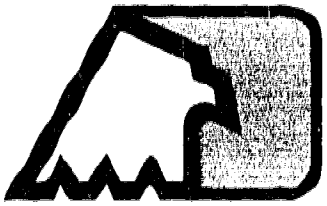
BAKKE v. REGENTS OF THE UNIVERSITY OF CALIFORNIA (previously cited)

and

WASHINGTON v. DAVIS, supra, ___U. S.____, 96 S. Ct 2040, 48 L. ED 2d 597, which finds that an entrance examination is not discriminatory merely because a disproportionately large number of applicant from one race are eliminated by the examination. I wish you good reading.

Archie B. Johnston

Archie B. Johnston
Director



tallahassee community college

December 17, 1976

MEMORANDUM

TO: Dr. Edward D. Jackson, Dean of Instruction
FROM: Archie B. Johnston, Director, Institutional Research
SUBJECT: Testing for Restricted Enrollment Programs

Purpose of Study

There has always been a larger number of applicants than can be accomodated in our restricted enrollment programs, e.g., Registered Nursing (RN), hence the problem of developing a fair method of screening applicants to insure a high probability of success for those who are accepted is one of major importance. In the past we have used a School and College Aptitude Test (SCAT) score of 40 on the Verbal portion and 50 on the Quantitative portion as entrance minimums. These scores were determined as valid criteria at another Florida community college and they have proven to be of value at this college. Only one of our RN graduates, out of several hundred, has failed her State Board of Nursing Examinations.

One major drawback to this criterion is that very few of our minority students score that high on SCAT tests. As a consequence, we have recently been reviewing our entrance criteria in an effort to provide more opportunities for our minority students to enter restricted enrollment programs without diminishing the quality of the program or diminishing its rigor. One result has been to develop a system in which SCAT scores are only one of several criteria for admission. Likewise we questioned the use of a SCAT score of V40 and Q50. It was apparent that a student who scored at these levels stood a high chance of success but was there a lower score which would also predict success but permit more students to enter the program?

Sample Population

A series of matrices were developed using samples from the following student populations:

1. Students who enrolled at TCC as part-time (11 or fewer Semester Hours) during the Winter 1976 term (N=348)

2. Students who enrolled at TCC as full-time (12 or more Semester Hours) during the Winter 1976 term (N=688)

3. Students who enrolled at TCC as full-time during the four semester period from Summer 1975 through Summer 1976 with a cumulative grade point averages computed for hours earned only at TCC (N=1036)

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4. Students who enrolled at TCC as full-time during the four semester period from Summer 1975 through Summer 1976 with a cumulative grade point average computed for hours earned at all colleges (N=1569)

The two populations considered most significant to our problem were the Winter Semester full-time students, as an indicator of what could be expected for one term, and the cumulative grade point averages for work performed only at TCC as an indicator of local performance. Part-time students and achievements at other campuses were considered to be of lesser import.

Matrices Descriptions

The three different tests run against the four populations listed above were: SCATV (Verbal), SCATQ (Quantitative) and FLA12 (Florida Twelfth Grade Test). The scoring ranges for both SCATV and SCATQ is 00-99 and for the FLA12 it is 000-495. Initial SCAT calculations were made at intervals of two, i.e., 00-01, 02-03,...98-99 and FLA12 intervals of ten, i.e., 00-09, 10-19,...490-495. However these intervals were found too small to be manageable or meaningful but have been included in the full study as Tables I-XII (Not included in this study but available upon request).

SCAT intervals were increased to ten, i.e., 00-09, 10-19 ...and FLA12 intervals increased to fifty, i.e., 00-49, 50-99...with the resulting tables being found satisfactory for our purposes. These tables are included in the full study at XIII-LXXII. (Note: the abbreviations A76 stands for Winter Semester 1976 and GPA stands for Grade Point Average computed upon a 4 point scale; A=4, B=3, C=2, D=1. The grades of N (Not graded), I (Incomplete), W (Withdrawn), S (Satisfactory) U (Unsatisfactory) or X (Audit) are not included in computation of grade point average at this college.)

Index of Tables:

Matrix	1 Group	2 Group	3 Group
SCATV VS A76 GPA (PART TIME)	I	XIII	XXV - XXVIII
SCATV VS A76 GPA (FULL TIME)	II	XIV	XXIX - XXXII
SCATV VS TCC GPA	III	XV	XXXIII- XXXVI
SCATV VS OVERALL GPA	IV	XVI	XXXVII- XL
SCATQ VS A76 GPA (PART TIME)	V	XVII	XLI - XLIV
SCATQ VS A76 GPA (FULL TIME)	VI	XVIII	XLV - XLVIII
SCATQ VS TCC GPA	VII	XIX	XIX - LII
SCATQ VS OVERALL GPA	VIII	XX	LIII - LVI
FLA12 VS A76 GPA (PART TIME)	IX	XXI	LVII - LX
FLA12 VS A76 GPA (FULL TIME)	X	XXII	LXI - LXIV
FLA12 VS TCC GPA	XI	XXIII	LXV - LXVIII
FLA12 VS OVERALL GPA	XII	XXIV	LXIX - LXXII

The relationships between test scores and student achievement are illustrated in the above tables by groups defined as:

Group 1 = SCAT intervals of two and FLA12 intervals of ten. Each cell reflects the number of discrete scores at that intersection.

Group 2 = SCAT intervals of ten and FLA12 intervals of fifty. Each cell reflects the discrete percentage of scores at that intersection.

Group 3 = Grade point averages from 0 up to an indicated value up to 4.00. Each cell reflects the cumulative percentage at that intersection.

In all three groups both numbers and percentages are shown for the row and column totals.

Six tables emerge as the most pertinent to this study:

XIV	-	SCATV VS A76 GPA (FULL TIME)
XV	-	SCATV VS TCC GPA
XVIII	-	SCATQ VS A76 GPA (FULL TIME)
XIX	-	SCATQ VS TCC GPA
XXII	-	FLA12 VS A76 GPA (FULL TIME)
XXIII	-	FLA12 VS TCC GPA

Of these, the most stringent in terms of test scores required to obtain passing grades are those associated with TCC (cumulative) grade point averages. Therefore, for purposes of establishing cut-off entry scores we are now able to narrow the selection of tables from the original 72 to a final 3:

XV	-	SCATV VS TCC GPA
XIX	-	SCATQ VS TCC GPA
XXIII	-	FLA12 VS TCC GPA

Examples of Use

If the question were, "What percentage of the full-time students enrolled during the Winter Semester of 1976 who scored between 40 and 49 on the SCATV had a grade point average between 2.01 and 2.50?", we would turn to Table XIV, look at row 40-49 then across to column 2.01 - 2.50 and since the entry at that intercept point is .217 we know that 21.7% of the full-time students who scored between 40 and 49 on the SCATV had a grade point average between 2.01 to 2.50. We also see that of the 688 students in this population, 78 or 11.3% of the total population scored between 40 and 49 on the SCATV and 62.6% of that group earned a grade point average of 2.01 to 4.00 ("C" or better). Consequently, if we could accept assurance that at least two thirds of our students would succeed with a grade of "C" or better, we could set an entry score of 40-49 on the SCATV.

Extending this example a bit farther, one might ask, "What percentage of the full-time students enrolled during the Winter Semester of 1976 and who scored 40 or above on the SCATV had a grade point average of 2.01 or better?" In this case we would be checking to see if a minimum SCATV score of 40 would assure an acceptable probability of success. Referring to Table XXX, row 40-49 and column 2.00 we see the percentage is 76.9 and that 529 of the 688 students earned an average grade of "C" or better. Conversely, it may be seen from Table XXIX that 23% of the same population earned less than a "C" average. Table XXXI indicates that of the students with SCATV scores from 0 to 39 there were 58.4% who earned less than a "C" average while of this bottom group we note from Table XXXII that 41.5% earned an average of "C" or above.

Original Question

Let us now attempt to answer our original question, "Is there a score lower than SCATV of 40 which might also assure academic success with a grade of "C" or better?" Let us assume that 50% or more of the students must have attained a passing grade - although the percentage may be raised or lowered and the process is the same but with resulting higher or lower scores as appropriate-as the minimum score to be acceptable.

Referring to Tables XV, XIX and XXIII (Abstracted and attached to this paper) it may be noted that over 50% of this population scored from 2.01 to 4.00 ("C" or better) with a SCATV of 30-39, or SCATQ of 20-29 or FLA12 of 200-249. Therefore we may assume academic success, as defined above, for students who achieved minimum scores of 30, 20 or 200 respectively.

Applicant Pools

At this point we might briefly describe two applicant pools this office is advocating. Under the original system of ranking all applicants according to SCATV scores, the top positions were almost always occupied by white students. If there were 100 applicants for 36 nursing student vacancies then only the top 36 were selected. This is the "best qualified" method of selection and does not afford an opportunity to those who may be lesser qualified but are still rightfully classified as "fully qualified".

Using a cut-off score of probable success - in this case scores of 30, 20 and 200 as "fully qualified" - we could create two pools: one of majority and one of minority students. If 14% (1/7th) of our student population is classified as minority students and our nursing class is 36 students then 5 should come from the top applicants in the minority pool and 31 from top applicants in the majority pool. Should there be only 3 minority students "fully qualified" then they would all be selected and the remaining 33 taken from the majority pool. By such a procedure the top applicants in both populations will be provided an equal opportunity to enroll while still

ensuring a reasonable probability of success for all applicants. Although there will still be some applicants remaining in the majority pool who were not selected even though they had scores higher than those selected from the minority pool, minimum standards were not lowered and all have a probability of success.

Applicants could be ranked in the pool according to results of several criteria and not solely on test scores. Test scores could be given specified weights and similar weighing could be given to other criteria which might vary from one program to another. Different careers might put differing emphases upon certain attributes or achievement. This will provide an opportunity for students who do not test well. All scores will be massed and ranked accordingly in the two pools.

Conclusion

The foregoing findings encourage reduction of the present SCATV entrance score requirements from 40 to 30, SCATQ from 50 to 20 and FLA12 from 275 to 200. Such a reduction should enable minority students to enroll in limited access programs hitherto virtually closed to them. The use of multiple criteria for determining eligibility should also broaden the base of students from which selection is to be made.

Recommendations

The following recommendations are made in order to increase the pool of minority students available for entry into health related programs with a reasonable chance for success in the program of studies, while still maintaining high quality.

1. SCATV: Applicant has attained a score of 30 or above

2. SCATQ: Applicant has attained a score of 20 or above

3. FLA12: Applicant has attained a score of 200 or above

4. The foregoing test scores be only three of several criteria to be considered in the selection of applicants for admission.

5. Applicants be drawn from both pools (14% from minority pool and 86% from majority pool) of "fully qualified" applicants in the same race and sex proportions as the student body in general.

Incls: Tables XV, XIX and XXIII

FLA12 VS TCC GPA

	0.00 0.50	0.51 1.00	1.01 1.50	1.51 2.00	2.01 2.50	2.51 3.00	3.01 3.50	3.51 4.00	ROW	%	% 2.01-4.00
450-495	.062	.000	.000	.031	.125	.250	.125	.406	32	.030	90.6
400-449	.009	.009	.018	.063	.162	.306	.270	.162	111	.107	90.0
350-399	.054	.006	.061	.123	.171	.239	.239	.102	146	.140	75.1
300-349	.026	.006	.040	.194	.255	.275	.140	.060	149	.143	73.0
250-299	.068	.024	.062	.242	.254	.198	.105	.043	161	.155	60.0
200-249	.055	.048	.090	.279	.272	.174	.048	.027	143	.138	52.1
150-199	.072	.031	.125	.333	.260	.114	.052	.010	96	.092	43.6
100-149	.131	.039	.171	.315	.144	.105	.052	.039	76	.073	34.0
50- 99	.166	.166	.250	.309	.047	.059	.000	.000	84	.081	10.6
00- 49	.263	.184	.210	.315	.026	.000	.000	.000	38	.036	2.6
COL	75	41	94	228	206	199	123	70	1036		N=598
%	.072	.039	.090	.220	.198	.192	.118	.067			57.5

SCATR VS TCC GPA

	0.00 0.50	0.51 1.00	1.01 1.50	1.51 2.00	2.01 2.50	2.51 3.00	3.01 3.50	3.51 4.00	ROW	%	% 2.01-4.00
90- 99	.000	.000	.038	.115	.192	.192	.230	.230	26	.025	84.4
80- 89	.061	.015	.000	.092	.215	.261	.200	.153	65	.062	82.9
70- 79	.065	.000	.016	.163	.229	.196	.147	.180	61	.058	75.2
60- 69	.044	.029	.029	.119	.194	.373	.119	.089	67	.064	77.5
50- 59	.057	.025	.076	.101	.222	.216	.229	.070	157	.151	73.7
40- 49	.040	.040	.050	.191	.171	.262	.111	.131	99	.095	67.5
30- 39	.027	.020	.095	.219	.239	.226	.130	.041	146	.140	63.6
20- 29	.086	.012	.068	.322	.285	.111	.080	.031	161	.155	50.7
10- 19	.087	.050	.162	.337	.137	.162	.050	.012	160	.154	36.1
00- 09	.202	.180	.234	.297	.053	.031	.000	.000	94	.090	8.4
COL	75	41	94	228	206	199	123	70	1036		N=598
%	.072	.039	.090	.220	.198	.192	.118	.067			57.5

SCATV VS ICC GPA

	0.00 0.50	0.51 1.00	1.01 1.50	1.51 2.00	2.01 2.50	2.51 3.00	3.01 3.50	3.51 4.00	ROW	%	% 2.01-4.00
90- 99	.071	.000	.000	.000	.214	.214	.214	.285	14	.013	92.7
80- 89	.000	.076	.076	.000	.153	.230	.153	.307	13	.012	84.3
70- 79	.048	.000	.032	.112	.129	.290	.209	.177	62	.059	80.5
60- 69	.031	.025	.025	.126	.177	.272	.215	.126	158	.152	79.0
50- 59	.062	.000	.043	.156	.225	.256	.175	.081	160	.154	73.7
40- 49	.051	.025	.051	.273	.222	.179	.128	.068	117	.112	59.7
30- 39	.062	.019	.090	.239	.277	.191	.086	.033	209	.201	53.7
20- 29	.087	.000	.166	.293	.198	.182	.055	.015	126	.121	45.0
10- 19	.157	.149	.184	.280	.149	.043	.026	.008	114	.110	22.6
00- 09	.126	.190	.206	.396	.047	.031	.000	.000	63	.060	7.8
COL	75	41	94	228	206	199	183	70	1036		N=598
%	.072	.039	.090	.220	.198	.192	.118	067			57.5%