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ABSTRACT

This study examined the relationship of first-time-in-college (FTIC) freshmen with race, high school grade point average (GPA), and Scholastic Assessment Test (SAT) and ACT Assessment scores. Data were obtained for 5 years of fall semester FTIC cohorts (n=8,573). The results show: (1) SAT and ACT scores were unrelated to re-enrollment/graduation rates; (2) re-enrollment/graduation rates were positively related to high school GPA; and (3) overall re-enrollment/graduation rates differed very little between races when high school GPA was controlled for. Among students with low high school GPAs, however, African Americans re-enrolled/graduates at a lower rate than other ethnic groups. Conversely, among students with high school GPAs, African Americans re-enrolled/graduated at a higher rate than other ethnic groups. (Author/SLD)

Using Ethnicity, Sat/ACT Scores, and High School GPA to Predict Retention and Graduation Rates

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Abstract

This paper examined the relationship of FTIC retention with race, high school GPA, and SAT/ACT scores. Data were obtained for five years of Fall semester FTIC cohorts (N = 8,573). The results showed: (a) SAT & ACT scores were unrelated to re-enrollment/graduation rates, (b) re-enrollment/graduation rates were positively related to high school GPA, and (c) overall re-enrollment/graduation rates differed very little between the races when high school GPA was controlled for. Among students with low high school GPAs, however, African-Americans re-enrolled/graduated at a lower rate than other ethnic groups. Conversely, among students with high high school GPAs, African-Americans re-enrolled/graduated at a higher rate than other ethnic groups.

Introduction

Only 44% of entering freshman college students in the U.S. obtain a degree or attend continuously during their first five years at the first four-year college they attend. An additional 17% complete their degree after dropping out for awhile or after transferring to another college (Tinto, 1987, pp. 15, 17). Thus 56% leave their first college before graduating. At USF, 54% of the Fall, 1985 FTIC (First-time-In-College) freshmen had either transferred or dropped out of school by the end of Fall, 1990 (Waugh, 1992). A national survey by the U.S. Department of Education (1977) of FTIC freshmen entering four-year colleges in 1973 found that, after two years, 28% of them had dropped out of school. Surprisingly, 77% of these drop-outs left voluntarily. Only 6.5% were dismissed from their first college during the first two years. At USF, this figure is 7.1% for the Fall, 1989 FTIC freshmen.

U.S. students tend to transfer. Recent data suggest that perhaps as many as 65% to 75% of incoming students at Florida's state universities either complete their degrees or continue their education after transferring to other universities or community colleges (Florida SUS Alternative Admissions and Retention Study, 1992). Each university must pay for the costs (e.g., recruitment, retraining) that result from a turnover rate of approximately 20% a year among undergraduate students (turnover ranges from 12%, between the junior and senior year, to 28%, between the freshman and sophomore year, at USF).

Today, few people question the importance of student retention. Research has found three general causes for student attrition: (a) uncertainty about goals and what to expect from college, (b) difficulty adjusting to college, and (c) lack of academic preparation.

We decided to take a closer look at the relationship between academic preparation and retention for First-Time-In-College freshman students at USF.

College Preparedness

Standardized test scores such as the SAT and ACT, and High School GPA are the most commonly considered admissions standards. Although standardized test

scores and high school GPA are not the only measures of academic preparedness, these two measures can be considerd as useful indicators to identify students who are at risk (Waugh, 1992).

In this study, we decided to examine how well these two measures of preparedness for college, namely, SAT/ACT scores and high school GPA, predict FTIC student retention.

Ethnicity

Most minority groups are under-represented in colleges and universities. This situation, however, is improving. Nationally, in the ten year period from 1982 to 1992, minority representation increased from 22.7% to 26.5% of total enrollment. In this time period, enrollment decreased from 73.3% to 70.5% for whites, and increased from 10.4% to 11.8% for African Americans, from 11.2% to 12.2% for Hispanics, and from 2.1% to 2.5% for Asians (Schmitt, 1994).

Given these changes in the enrollment patterns, we decided to examine the relationship between ethnicity and the retention of FTIC students. Specifically, we were interested in determining whether the relationship between the two academic preparation variables and retention was affected by ethnicity.

Present Study

This study investigated two primary questions:

1. How well do SAT/ACT scores and high school GPA predict retention?

2. Does the relationship of SAT/ACT and high school GPA with retention vary depending upon the ethnic group?

Method

Sample

The sample included 8,573 First-Time-In-College (FTIC) students who had entered USF in the Fall semesters during 1984–1988.

Retention Measures

Three measures of retention were used:

Graduation– The student had graduated within four years (i.e., within 12 calendar semesters).

Re-enrolment – The student was still attending USF after four years. More specifically, the student had enrolled in either the 12th, 13th, or 14th calendar semesters (i.e., either the last semester of the fourth year or one of the two semesters

that immediately follow the fourth year).

Re-enrolment/Graduation – The student had either graduated or been re-enrolled (according to the definitions of graduation and re-enrollment shown above). Because few students graduate within four years, it makes sense to consider both re-enrollment and graduation as successful outcomes. Therefore, this measure is the most meaningful one.

When a student leaves USF, we don't know whether he/she (a) transfers to another school, (b) returns to USF a year, or longer, later, or (c) drops out of school forever. Therefore, some students who leave USF are, undoubtedly, academic successes.

Academic Preparedness Measures

High School GPA: This was the high school GPA reported at the time of admission of a FTIC student.

SAT Scores: Combined Verbal and Quantitative SAT scores were used as the SAT score measure.

ACT Scores

Procedure

The data for this study were obtained from the USF/RAP longitudinal retention databases maintained by the Office of Resource Analysis and Planning (Roberts, 1984–88). These databases contain information from the university's student files.

Results and Discussion

Correlations with Re-enrollment and Graduation

Point-biserial correlations were computed between high school GPAs, ACT scores, and SAT scores and the three retention measures: graduation, retention, and re-enrollment/graduation.

Table 1 shows that high school GPA is moderately correlated (correlations can range from -1 to +1) with graduation and re-enrollment/graduation. In contrast, SAT and ACT scores had almost no relationship with any of the three measures of retention.

Table 1. Point-Biserial Correlations Between GPA/Test Scores and Retention

	Re-enrolled	Graduated	Re-enrolled or Graduated
HS GPA	.07	.22	.21
ACT Score	.02	.10	.10
SAT Score	–.04	.05	.01

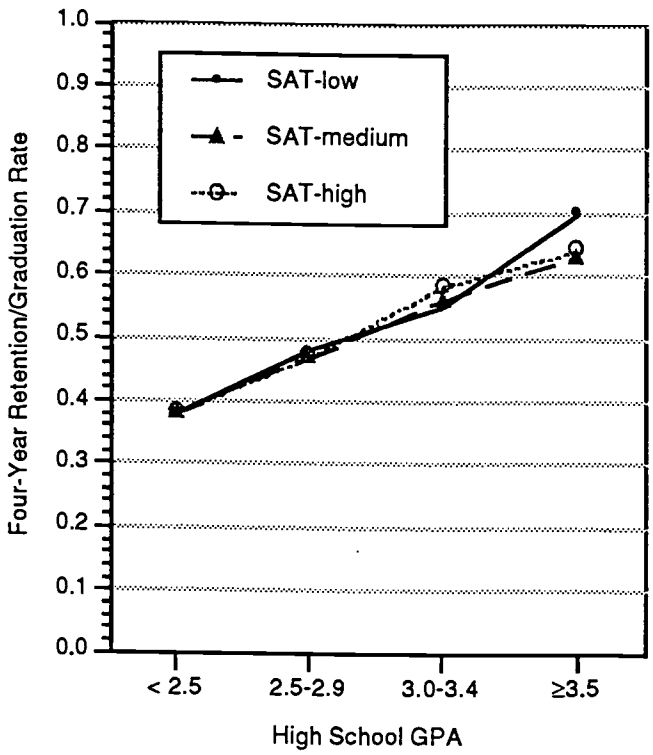
Note: A value of '0' was assigned when a student had **not** *re-enrolled,graduated,* or *re-enrolled/graduated*; a value of '1' was assigned when a students **had** been *re-enrolled, graduated, or re-enrolled/graduated.*

Figure 1 shows the relationship of re-enrollment/graduation with SAT/ACT scores and high school GPA. To make the relationships clearer, the SAT/ACT and high school GPA measures were grouped into ranges.

SAT scores was put into three groups: low (< 890), medium (890–1040), and high (> 1040). Students with no SAT score had their ACT score equated to the appropriate SAT score. High school GPAs were put into four groups: low (< 2.5), medium-low (2.5–2.9), medium-high (3.0–3.4), and high (≥ 3.5). Thus, each student fell into one of 12 cells (i.e., 12 combinations of SAT and GPA).

The number of students in each cell (re-enrolled or graduated) was counted. Separate 3 × 4 tables were computed for all students combined and for each ethnic group. Figure 1 and Table 2 clearly show two things:

Figure 1
Re-Enrollment/Graduation
Rates by SAT/ACT and High School GPA



1. Students with higher high school GPAs have much higher re-enrollment/graduation rates. For example, students with a high school GPA of 2.5–2.9 have a re-enrollment/graduation rate (of 47–48%) at least 9% higher than students with a high school GPA of less than 2.4 (whose rate is 38%).

2. SAT/ACT scores are unrelated to retention.

Table 2. Percentage of Students Graduated or Re-enrolled (number of entering students is in parentheses)

SAT Equivalent	High School GPA							
	< 2.5		2.5 – 2.9		3.0 –3 .4		≥ 3.5	
0–889	38%	(280)	48%	(470)	55%	(550)	70%	(144)
890–1050	38%	(760)	47%	(1,734)	56%	(1,175)	63%	(587)
1050–1400	38%	(285)	47%	(587)	58%	(809)	64%	(1,192)

Note: The divisor for each percentage is in parentheses. For example, look at the top right-hand cell in the table. 70% of the 144 students who entered USF with an SAT score 0–889 and a GPA ≥ 3.5 were retained or graduated as of four years after entering USF.

Retention Differences Among Ethnic Groups

The four-year re-enrollment/graduation rate for African-American students (.487) was slightly lower than the rate for white students (.522). It was found, however, that this difference was due to the relatively larger proportion of African-American students, compared with white students, who entered with low high school GPAs. When the proportion of students in each GPA × SAT cell was adjusted[1], for each ethnic group, to the proportion for white students, the re-enrollment/graduation rate for African-Americans rose to .555 (see Table 3).

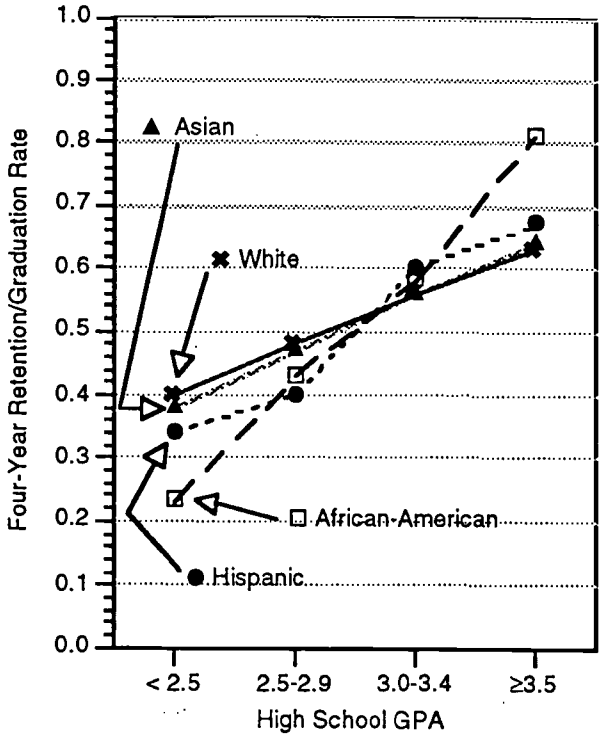
Table 3. Retention Rates by Ethnic Group, Adjusted for High School GPA and SAT Scores

Ethnic Group	Rate of Re-enrollment or Graduation	Adjusted Rate of Re-enrollment or Graduation
White	.522	.522
Asian	.608	.529
African-American	.487	.555
Hispanic	.526	.493

Thus, the African-American student body has a lower retention rate because such a large percentage of these students are ill-prepared for university (i.e., they have low high school GPAs).

Although the adjusted retention rate for *all* African-American students was similar to the rate for *all* white students, the retention rates for these two ethnic groups differed considerably for students with low GPAs and students with high GPAs. Figure 2 shows that, among students with a *low* GPA, about twice the percentage of whites, compared with African-Americans, were retained. Conversely, among students with a *high* GPA, a much greater percentage of African-Americans compared with whites was retained.

Figure 2. Re-Enrollment/Graduation Rates by Race and High School GPA



Differences in Preparedness Between Ethnic Groups

There are some large differences in preparedness between ethnic groups. Table 4 shows, for each ethnic group, the percentage of students in each high school GPA range. The table clearly shows that Asians have, by far, the highest high school GPAs whereas African-Americans have the lowest high school GPAs.

The disproportionately small percentage of Asian FTICs who have *low* high school GPAs (i.e., the proportion is less than half that of any another ethnic group) raises some interesting research questions. (Remember that these Asian students were U.S. residents when they applied. Therefore, they are actually Asian-Americans.) Some possible reasons for their high GPAs include:

1. The admissions process discriminates against Asian-Americans.
2. Asian-American students with low GPAs do not apply to university.
3. There are few Asian-American high school graduates with low GPAs.

Further research would provide some answers. Most of this research could use existing data.

Table 4. Each High School GPA, by Ethnic Group

Ethnic Group	High School GPA							
	< 2.5		2.5 – 2.9		3.0 –3 .4		≥ 3.5	
Asian	6%	(15)	18%	(47)	28%	(75)	48%	(128)
Hispanic	13%	(77)	29%	(173)	33%	(195)	25%	(150)
White	16%	(1,153)	34%	(2,477)	29%	(2,170)	22%	(1,589)
Afr.-American	25%	(80)	29%	(94)	29%	(94)	17%	(53)

Notes: Some rows do not sum to exactly 100% because of rounding. The number of students is in parentheses.

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