PREDICTING ACADEMIC SUCCESS AMONG STUDENT-ATHLETES

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ABSTRACT

This paper examines various measures that may be useful in predicting graduation among student-athletes. Rather than simply focus on the most commonly used measures (SAT scores and high school grade point average) four groups of variables were utilized: demographics, high school preparation, university-related variables, and athletic participation. Both bivariate and multivariate measures indicated that demographic and high school preparation variables were the most beneficial in predicting success among student-athletes. Perhaps the most significant finding was that when included in the regression analysis with other high school preparation variables, SAT scores were not significantly related to graduation. The most significant variables were high school grade point average and the number of college preparatory math classes taken.

Predicting Success of College Athletes

The role of the student-athlete has received considerable attention, both in the academic literature and the popular press. This is in large part due to the fact that although the presence and success of the student-

athletes' athletic pursuits are often central to the public image of the university, their success as students is often marginal at best. This paradox has come to light as the result of lawsuits, scandals and now congressional intervention. As a result, universities are now being held accountable for the graduation rates of their student-athletes.

Differences in academic success have been noted in a variety of studies. Females, for instance, are more successful in college regardless of the academic measure utilized, as are non-minority student athletes (Mayo, 1986; McLaughlin, 1986). In fact, one of the most consistent findings is that the group of student-athletes whose academic performance is the weakest are black males in revenue producing sports (Brigham, 1982; Purdy, Eitzen, and Hufnagel, 1982; Spivey and Jones, 1975). These findings are not surprising given that research has indicated that monitory athletes tend to enter the university less prepared than their white counterparts, especially minority students who participate in revenue-producing sports (Kiger and Lorenzten, 1986).

One argument that has been made for the lack of success in this group of student-athletes is:

> Lack of information or ignorance regarding the role of the college student (how to act or behave like a college student) and how the academic demands of college are different from those in high school also are contributing factors. Because of their ignorance about college, not because of their intellect, many athletes act inappropriately in the classroom and hold on to erroneous assumptions and/or expectations about college work . . . in other words, because of their special star status in high school, many athletes never learn the student role and often have a distorted notion of what is means to be a college student (Wilbur and Wilbur, 1986; 31).

Notwithstanding arguments such as this, much of the work in this area has focused on the grades and test scores of minority student-athletes.

A variety of studies have attempted to predict success in college of student-athletes by use of graduation rates. Because of the emphasis the NCAA has placed on the standardized tests (SAT and ACT) some research has examined these variables to predict this success (Brigham, 1982); while other researchers have focused on different factors. For instance, Lang, Durham, and Alpert (1988) found that high school grade point average, repetition of a year of high school, discipline actions by head coach, "feeling like I'm majoring in eligiblity," mother's level of education, and graduating from a private high school all affect the success of college football players. This study indicates support for the position of Cook and Mottley (1984: 18) who argue, "It is inappropriate to conclude that any one of the predictive variables would singularly lead to academic success."

This paper attempts to identify the factors which best predict graduation rates of student-athletes. Four groups of variables were examined: demographics, high school preparation, university-related variables, and athletic participation.

THE SAMPLE

Data pertaining to high school preparation, university academic performance and demographics were requested from Admissions and Records on 108 recruited student-athletes who entered the university during the 1983-84 and 1984-85 academic years. Records were returned on 105 of the student-athletes. All the student-athletes whose records were requested participating in one of the eight priority sports: men's basketball, football, baseball, men's gymnastics, women's gymnastics, women's basketball, softball, women's volleyball. The final sample was made up of 75% men and 25% women. Sixty-one percent were white; the remaining 39 percent were ethnic monitority.

Fifty-one percent of the sample entered the university as first time freshmen, 39% were community college transfers, and the remaining 10% were transfers from other four-year universities. Of those who were community college transfers, 28% had obtained their Associate of Arts degree. Scholastic Aptitude Test (SAT) scores were available for 88% of the sample.

Twenty-four percent of the sample utilized a "redshirt" year. Eleven percent started all four years, while 42% of the sample never started. Thirty percent of the student athletes traveled with the team for three or more years. Data concerning athletic participation were obtained from the coaches of the 105 student athletes. Coaches assessed the athletic ability of the sample in the following manner: 38% were rated above average, 31% average, and 31% below average. Only half of the student-athletes completed their final year of eligibility.

FINDINGS

An analysis of the bivariate relationships indicated that the demographic variables, ethnicity and gender, were both highly correlated with the graduation. The graduation rate for females was 68%, while for males it was 20%. In a sport-by-sport comparison, this difference becomes even more apparent; the graduation rate of the men's team with the highest rate equals the women's team with the lowest rate of graduation (42%).

Consistent with much prior research ethnicity is also highly correlated with graduation. White student-athletes are more likely to graduate (44%)

than their minority counterparts (11%). White females had the highest rate of graduation, while miniority males were the lowest. Also consistent with prior research, revenue producing sports had the fewest graduates.

Many high school preparation variables examined, but high school GPA, the number of F's received in high school, and the number of college preparatory English and mathematics courses had the greatest effect on graduation. SAT scores, while significant, were barely so. Graduation rates were not affected by whether the student athlete entered the university as a freshman or a transfer student. Students who had obtained an Associate of Arts degree were no more likely to graduate than were those who transferred without completing the degree.

University-related variables had the least effect of the four types of variables included in the analysis. Only two variables (number of semesters on academic probation and whether the student had been disqualified) were related to graduation. Having been a discipline problem to the team or the university did not have an effect on graduation.

Athletic participation variables did affect the rate of graduation among the student-athletes. As previously mentioned, graduation rates differed significantly by sport, with revenue-producing sports having the lowest rates. Other variables in this category that made a difference in graduation rates were skill level (specifically, students rated by the coach as having an above average level of skill were less likely to graduate), those traveling for more than two years with the team had lower rates of graduation, and those who failed to complete their last year of eligiblity were less likely to graduate. Having "redshirted" their freshman year, the amount of financial aid, and the amount of time on the bench were not related to graduation rates.

In order to assess which of the four factors best predited graduation rates of student-athletes, regression analysis was utilized (see Table 1). Variables that were both significantly related to graduation and theoretically relevant were chosen for inclusion in the series of regression equations. Because university variables were either not significant or theoretically redundant, those variables were not included in the analysis.

Table 1 indicates that high school preparation variables explain the most variance (36%) in graduation rates. It is important to note that when these variables were entered into the regression equation, SAT scores failed to attain significance. Since the NCAA has placed such importance on the student-athletes' test scores, a separate regression analysis which included SAT scores only was done. Although the inter-item correlations did not show a high degree of multicollinearity, when SAT scores alone were allowed to predict graduation rates, 11% of the variance was explained. As is demonstrated from these analyses, high school grade point average and the number of high school math classes accounted for the majority of the explained variance.

The two demographic variables (gender and ethnicity) explained 20% of the variance in graduation rates, with gender accounting for the majority of the explained variance. Although ethnicity was significant in the bivariate analyses, it fell out of the equation at the multivariate level. This is due to the interaction of these two variables as previously mentioned (black males are least likely to graduate while white females are the most likely to receive their degrees).

Athletic participation variables accounted for 14% of the variation in graduation rates. Only two of the four variables remained in the equation in the multivariate analysis. Only using the final year of eligibility and the number of years on the traveling squad remained significant in the regression equation. While significant at the bivariate level, the variables of starting and athletic ability failed to enter the equation in the regression analysis. Obviously there is a degree of shared variance among these variables which affects these results.

DISCUSSION AND CONCLUSIONS

The findings presented in the preceding pages have a great deal of significance in the academic advising community at both the university and the high school level. In these times of tight budgets and significant repercussions associated with low graduation rates, the ability to identify potential student-athletes who are likely to succeed in the classroom will be especially important. Knowing which student-athletes will benefit most from intensive academic services will also be useful.

It is especially important to note that the SAT score variable, which has been one of the most commonly used predictors of academic success and the most controversial aspect of Proposition 48, was washed out by other more significant variables. High school grade point average, although influential, was only one of the variables that was important in predicting graduation. Limiting the screening of potential student-athletes to these two commonly used variables is much too restrictive a model.

One of the more surprising aspects of this analysis was the emergence of the number of college preparatory math classes taken in high school as a highly predictive variable. As previously mentioned, high school math classes appear to be a better predictor of graduation than almost any other variable, with the exception of high school grade point average, at both the bivariate and multivariate levels of analysis.

It is often assumed that college preparatory English classes are of greater importance; however, our analysis showed otherwise. This may be due to two different but related factors, academic advising in the high school and student motivation. One could argue that only the most motivated students would venture into the more advanced math classes;

thus, the importance of this variable overpowers that of English classes since most students are required to take more English than math. It is also possible that high school advisors are likely to encourage only those student-athletes whom they view as motivated to take the more challenging and beneficial high school courses.

The consistency with which demographic variables such as gender and ethnicity appear to be highly predictive (c.f. Brigham, 1981;) Mayo, 1986; Purdy, et. al., 1982; Spivey and Jones, 1975) should be interpreted with extreme caution. While these variables should never be used to deny access to the university for the obvious reasons of discrimination, the cultural backgrounds of these youth should be used in the construction of academic programs as well as the early identification of student-athletes who may benefit from more intensive academic support. Furthermore, it is important to urge high school advisors to encourage this group of student-athletes to take appropriate courses which better prepare these students for their university experience.

An interaction effect may exist between the athletic ability of the student-athlete and the encouragement he or she receives at the high school level to take the more appropriate college preparatory classes. It may be that the most successful athletes receive the least encouragement in the academic arena. Since it is often this group which requires the most monitoring at the university level to ensure continued eligibility as well as academic success, it is important to identify these student-athletes early in their collegiate career so that they may benefit from increased academic services.

It is also the most athletically talented group which travels with the team for the longest period of time. Data suggests that student-athletes who consistently travel for three or more years are the least likely to graduate. Thus, it may be necessary for university officials to try to limit the amount of class time missed for travel and provide those on the traveling squad with the greatest amount of academic services.

This analysis indicates that a number of variables are important in the prediction of academic success. Preparation in high school and the motivation to succeed in both athletic and academic endeavors may be the keys to successful completion of a college degree. It is especially important that this information be filtered down to high school advisors and coaches to ensure that student-athletes receive the necessary encouragement prior to enrolling at the university level. It is possible to work with the marginally motivate student-athlete to develop a greater interest in academic success, but those who enter the university with poor motivation are difficult to change.

Thus, as Lang, et. al., 1988 and Cook and Mottley, 1984 have also indicated, when identifying student-athletes it is important to look at much more than high school grades and SAT scores. Classes taken, especially

math, and the degree of academic motivation may be more important predictors of academic success than the use of standardized test scores. It is also imporant that the academic motivation of student-athletes in revenue-producing sports be closely scrutinized, since ehtnic minorities who participate in these sports have consistently been the least likely to graduate.

Student-athletes who fit the profile should be given the most intensive academic support available. It will be especially necessary to bring an understanding of the cultural backgrounds of the student-athletes into these programs.

Table 1
Regression Equation Results for Selected Variables

Variable	beta	F	Significant	r2
Demographics				.20
Sex	-.41	13.72	.00	
Ethnicity	.10	.837	NS	
High School Preparation				
H.S. GPA	-.81	18.02	.00	
College prep Math	-.39	6.93	.01	
College prep English	-.03	.04	NS	
SAT Score	.03	.060	NS	
SAT Score	.36	9.36	.00	.11
Sports Participation				.14
Finish Eligibility	.30	4.12	.05	
Traveling Team	.19	2.95	.07	
Years Starting	.11	.298	NS	
Skill Level	-.04	.52	NS	

REFERENCES

Brigham, I. (1981). Selected academic and non-academic variables as predictors of male student-athletes at Southern Illinois University at Carbondale. Dissertation Abstracts International, 42, 4417-A.

Cook, N. J. and Mottley, R. R. (1984). Predictors for academic achievement for college freshmen football players: An analysis of findings. (ERIC Documentation Reproduction Service No. ED 260 385)

Kiger, G. and Lorentzen, D. (1988). The effects of athletic participation on university academic performance: A comparison of athletes and the general student population. Sociology of Sport Journal, 3, 160-167.

Lang, G., Dunham, R.G., and Alpert, G. P. (1988). Factors related to the academic success and failure of college football players: The case of the mental dropout. Youth & Society, 20, 209-221.

Mayo, A. M. (1986). Athletes and Academic Performance: A study of athletes at an NCAA Division I institution. Academic Athletic Journal, Fall: 25-33.

McLaughlin, B. (1986). Advising college athletes in the 1980's: A higher education abstracts review. NACADA Journal, 6, 31-38.

Purdy, D. A., Eitzen, D. S. and Hufnagel, R. (1982). Are athletes also students? The educational attainment of college athletes. Social Problems, 29(4), 439-448.

Spivey, D. and Jones, T. A. (1975). Intercollegiate athletic servitude: A case of black Illini student-athletes. 1931-1967. Social Science Quarterly, 55, 939-947.

Wilbur, J. R. and Wilbur, M. (1986) The Academic Game. Athletic Academic Journal, Fall, 31-34.