Predicting Academic Success for NCAA Division I Student-Athletes

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Demographic data were obtained on the population of all freshmen student-athletes admitted to the University of Florida (UF) during 1995 (N=91). Demographic data included gender, race, age, distance from home, and several subjective measures. The researchers analyzed the relationship between UF's predictive index and student-athletes' actual Grade Point Average (GPA) and found a significant correlation ($r_{(89)}$=.60). The correlation between athletes' High School GPA (HSGPA) and their UF GPA was also significant ($r_{(89)}$=.61). No correlation was found between UF GPA and any of the subjective measures administered to the athletes. Recommendations are made for future testing and prediction of academic success for National Collegiate Athletic Association (NCAA) Division I student-athletes.

Over the last few years as a result of the Student Right-to-Know act (Zuckman, 1990) and NCAA legislation (NCAA, 1997) forcing schools to disclose graduation rates there has been increased scrutiny of the graduation rates of athletes participating in intercollegiate athletic programs. The issues involved are the result of two competing principles: the first being the university's responsibility to admit students who have a reasonable chance of academic progress including graduating, and the second the ability of the university's athletic programs to compete at a national level. This research is a preliminary investigation of the effectiveness of predictive devices used to identify the expected academic success of incoming student-athletes.

Administrators seeking to minimize the occurrence of admitting academically ill-prepared students to their institutions have long sought measures for accurate prediction of a high school student-athlete's likelihood of success at NCAA Division I schools. During 1965, the NCAA devised a formula which reliably predicted a student-athletes' first year college GPA (Wagner, 1972). This "1.600 Rule" mandated that in order to be eligible to play, an individual must achieve a minimum GPA of 1.600 college prep curriculum (based on a maximum 4.00). The 1.6 was the result of research conducted under the direction of the Academic Testing and Requirements Committee, chaired by

James H. Weaver of the Atlantic Coast Conference during 1963 and 1964. The committee's research analyzed the academic performances of 40,900 students at 80 member institutions and produced an expectancy table. The table was based upon high school academic performance in college prepatory curriculum correlated with scores on the SAT or other standard college entrance tests. Its purpose as explained by committee member Laurence C. Wood of the University of Kansas was to enhance a college's ability to judge a student's probability of academic success prior to being considered for an athletic scholarship (Falla, 1981).

Critics believed that the 1.6 rule was too lenient and suggested that it interfered with autonomy and responsibility of member institutions. Further, they suggested that the validity of the predictive tests was questionable. As a result, the 2.0 rule was implemented. This rule, however, turned out to be too lenient, as it simply required a student-athlete to graduate from high school with a 2.0 GPA without requiring credit in any specific college preparatory courses. During the 1980s, Proposition 48 was devised and implemented in order to tighten admissions standards for high school athletes (Lederman, 1992). Proposition 48 required the student-athlete to complete 11 core (college prep) courses with 2.0 GPA and to score a minimum of 700 on the Scholastic Aptitude Test (SAT) or 15 on the American College Test (ACT).

Proposition 48 has improved graduation rates, however, it has not provided an accurate indication of a student's actual chance to graduate from NCAA Division I schools. As a result, a predictive index (PI) was developed to predict the first year GPA of students admitted to the University of Florida (UF). According to Bill Kolb, Director of Admissions at UF, the predictive index was originally developed for the institution by the Educational Testing Service (ETS). The formula has been updated several times by faculty members at the UF, with the most recent update completed by David Denslow Ph.D., Professor of Economics at UF during 1990. The current formula used at the University of Florida follows:

For students taking the SAT (Old Scoring System):

(Verbal Subscore x .00081)+(Quantitative Subscore x .00102)

(HSGPA x .61) - .3184 = UF predicted first year GPA

For students taking the ACT:

(Eng. x .0314)+(Math x .0201) + (HSGPA x .44) = UF predicted first year GPA

An individual student-athlete who meets the minimum Proposition 48 requirements has a predictive index of only 1.54 based on the above formula, and thus is an academic risk.

Another issue which has arisen as a flaw in utilizing Proposition 48 and Proposition 16 as admission criteria is the practice of grade forgiveness. In order to determine a student-athlete NCAA core GPA only the 13 "best" courses are considered. University of Florida policy does not allow grade forgiveness for current students in determining HSGPA for admission purposes. Therefore all college prep courses are calculated in the HSGPA. For example, if a student takes algebra I in the ninth grade and earns a "D", but repeats the course in the eleventh grade and earns a "B" both the "D" and "B" grades are calculated in the predictive index. As a result, a person who met the NCAA standards, but repeated several high school courses could remain inadmissible to UF. A student-athlete is admissible to UF if he or she meets NCAA qualifier requirements and if the

predicted first year GPA is 1.6 minimum on a 4.0 scale. The reason 1.6 is used as the admission criteria instead of 2.0 is because research conducted by UF faculty indicates that student-athletes perform at .40 of a letter grade higher than non-athletes with comparable admissions records. This performance increment is attributed to the academic support provided to student-athletes by the University Athletic Association Office of Student Life.

Although proposition 48 has increased the graduation rates of student-athletes, admissions officials at UF believed that this standard did not indicate that a student-athlete had more than a reasonable chance to graduate from the institution. As a result, the predictive index developed by ETS was adopted for admissions of special populations (inclusive of student-athletes) at the University.

Currently college and university administrators nationwide continue to search for a tool that will accurately predict which student-athletes will be successful in their academic programs. Details of current databased predictions, methods, and results, are presented in this paper, and recommendations are rendered based on continuing study. Admission offices and athletic departments of NCAA Division I universities nationwide may choose to consider these methods and suggestions in their own programs.

METHOD AND HYPOTHESES

Predictive and demographic data reflective of the freshman student-athletes at UF during 1995 were obtained from UF's Office of Student Life (N=91). Predictive data consisted of each athlete's HSGPA, SAT and/or ACT score, UF Predictive Index (PI), and several subjective measures. The PI combines the scores of the SAT or ACT with the HSGPA to predict the student-athletes' academic performance for the freshman year at UF. The subjective measures included the following: Dropout proneness, predicted academic difficulty, educational stress, receptivity to institutional help, academic motivation, social motivation, general coping, receptivity to support services, and initial impression of the staff concerning the student-athlete. Demographic data used consisted of family background, which included age, gender, race, parents' education level, and distance from home.

Because the PI includes HSGPA and admission test score, it was hypothesized that the PI would be a better predictor of first year college GPA than either of its component measures. Each of the subjective measures was designed to correlate positively with GPA, and it was therefore predicted that this relationship would hold true for the present data.

Demographic data was expected to follow established patterns. Results of other studies have suggested that relative to Caucasians, African-Americans receive lower grades and score lower on standardized tests of academic ability (Bachman, 1970; Demo & Parker, 1987; Herring, 1989; Howard & Hammon, 1985; Levine & Eubanks, 1990; Osborne, 1995; Reyes & Stanic, 1988; Simmons, Brown, Buch, & Blyth, 1978; Steele, 1992). It was further demonstrated that female student-athletes are better prepared for university work and perform better academically at that level than their male counterparts (Eitzen, 1987-1988). It was expected that these relationships would be evident in the present population.

Intuitively, it was expected that the farther from home an individual is at college, the lower would be her/his academic performance (i.e., lower GPA). Students matriculating great distances from home might not often be able to visit with or talk with parents and friends, severing the support network that existed during high school. Thus, there was an anticipated negative correlation between miles from home and GPA.

Finally, it was predicted that students would have a higher GPA if their parents were educated. It was hypothesized that parents who earned college degrees would be better able to prepare their children for the university experience than would parents with high school education or less.

All predictive and demographic variables were analyzed using Microsoft Excel to determine the Pearson Product Moment correlation between all variables of interest including actual UF GPA. Several Analyses of Variance (ANOVA) were calculated for UF GPA to determine significant differences as a function of gender, race, parents' education level, and distance from home.

RESULTS

The overall correlation between UF's predicted GPA and the athlete's actual GPA was strongly positive $r_{(89)} = .603$, $p < .001$. By sport, significant correlation's were found for football, $r_{(21)} = .634$, $p < .01$, men's basketball, $r_{(4)} = .913$, $p < .01$, men's track, $r_{(3)} = .879$, $p < .05$, women's soccer $r_{(16)} = .778$, $p < .001$, and women's track, $r_{(5)} = .908$, $p < .01$. For some sports there was no significant correlation. Baseball, men's golf, men's swimming, and women's swimming yielded little correlation between predicted and actual GPA. A correlation could not be computed for gymnastics, and women's golf because of small samples.

The overall correlation for the athletes' HSGPA and their actual UF GPA was significant $r_{(89)} = .613$, $p < .001$. No other significant correlations were found between UF GPA and any of the subjective measures administered to the athletes.

The descriptive statistics of race, gender, parents' education level, and distance from home were also compared. Significant differences were observed between GPA in two categories. Caucasian GPA were significantly higher than African-American GPA, $F_{(1,84)} = 4.61$, $p < .013$ ($M = 2.63$, $M = 2.20$, respectively), and female GPA were significantly higher than male GPA, $F_{(1,88)} = 21.80$, $p < .001$ ($M = 2.89$, $M = 2.28$, respectively). No significant differences were found between GPA of student-athletes coming from different levels of parental education, $F_{(2,87)} = 1.12$, $p = 0.332$. Nor was a significant difference found between student-athletes GPA and their distance from home, $F_{(5,85)} = .80$, $p = 0.551$.

DISCUSSION

While it is encouraging that the UF PI, as indicated by this sample, is strongly correlated with actual UF GPA, it is interesting that HSGPA is an equally accurate predictor of success. Clearly, both measures are not required in order to make a reasonable prediction. However, the UF PI does possess one advantage over HSGPA. By using an

objective measure (SAT or ACT), UF PI controls for relative differences in quality of education at different high schools. Similar correlation studies should be conducted with subsequent admission classes before selecting one method over another. However, at the present time, maintenance of the UF PI seems warranted.

None of the subjective measures used were correlated with GPA. Therefore, continued use of these measures needs to be evaluated with other samples in order to make an appropriate evaluation of their use in a predictive equation. The factors studied were dropout proneness predicted academic difficulty, educational stress, receptivity to institutional help, academic motivation, social motivation, general coping, receptivity to support systems, and initial impression. Of most interest was the relationship between initial impression of the institution and GPA. The Initial Impression (II) construct is a cumulative rating made by an admissions counselor based upon all other subjective measures. The II was negatively correlated with GPA. While the correlation was not strong ($r = -.152$), it should alert the admissions staff at the university that in its present formulation these subjective measures are not positively correlated with GPA. The preliminary nature of this investigation would indicate that the use and formulation of these subjective measures in a predictive tool needs to be re-evaluated.

Demographic data examined were race, gender, and parents' education level. Significant differences were found between GPA of African-American and Caucasian student-athletes, and between female and male GPA. No significant differences were found between students of parents possessing different levels of education.

As predicted, Caucasian GPAs were significantly higher than African-American GPAs. This is congruent with previous research finding that African-Americans receive lower grades than Caucasians (Demo & Parker, 1987; Levine & Eubanks, 1990; Reyes & Stanic, 1988; Steele, 1992). Furthermore, as expected females GPAs were significantly higher than males GPAs. This effect was not surprising, as it has been suggested in the literature numerous times (Eitzen, 1987-1988). That no difference was found between students from different parental education levels was not expected. The researchers predicted that a significant difference would be revealed because of the intuitive appeal of the idea that children of highly educated parents would be academically more proficient (i.e., possess higher GPA) than children of less-educated parents. It appears logical that educated parents would have a more academically enriched home environment, and in families in which both parents are educated, income is likely to be higher than in those homes with less educated parents. However, it is possible that some children of these more affluent, better-educated families do not feel a need for the financial security of substantial post-college employment, and are therefore not motivated to success academically. Conversely, it is possible that many students whose parents are uneducated are driven by the desire to be the first member of the family to earn a college degree. These exceptions to the rule may have kept the mean GPA of the two groups' close.

The findings of this study support the use of predictive measures for use in NCAA Division I universities. It is suggested that universities continue to evaluate the use of subjective measures in an attempt to establish criteria with more stringent predictive value. In the future the use of more advanced statistical techniques such as multiple regression techniques will enable universities to develop more sensitive predictive tools. Furthermore, the continued statistical investigation of the at risk student-athlete population will provide supportive data for the universities assistance programs.

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