Assessing the Academic Performance of College Football Players Through the Use of Multiple Measures: A Six-Year Follow-Up Study

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In recent years a vast amount of media attention has focused on the lack of academic success of student-athletes, particularly those who participate in revenue-producing sports (sports that generate income by charging admission fees, receiving television contracts, and competing in post-season contests). Emphasis has been placed on the admission of academically underprepared students who enter the college ranks and are allowed to participate in intercollegiate athletics, often receiving preferential treatment such as the altering of transcripts, receiving credit for courses never taken, or extra financial benefits (Underwood, 1980). Recently, many have expressed concerns about the low number of revenue-producing sport participants who graduate, or after completing four years of eligibility display alarming deficiencies in basic educational skillsand progress toward degrees (Ervin, Saunders, Gillis, and Hogrebe, 1984). It appears at the college level that trying to succeed in the classroom and on athletic fields may be an impossible task for many student-athletes (Thomas, 1968).

Data-based research regarding the academic performance of Division I-A revenue-producing sports participants is limited. Although some research does exist, much of the data is misleading and incomplete, thus creating difficulty in making accurate generalizations about the academic performance of these student-athletes (Ervin, Saunders, Gillis, and Hogrebe, 1985). Although many

have speculated about factors that may affect the ability of the student-athlete to perform well academically, little research has been conducted with regard to the academic characteristics that may influence this lack of success. Therefore, the purpose of this study was to examine the influence of a variety of academic success variables as they relate to the academic performance of Division I football student-athletes.

Methods

Through studying a group of incoming freshman football student-athletes at a large midwestern university, it was the goal of this study to analyze the influence of scores from the Nelson-Denny reading test (NDRT), the Minnesota Scholastic Aptitude test (MSAT), the Brown-Holtzman Survey of study habits and attitudes (SSHA), ACT, and high school rank (HSR) on the academic success of each participant. For ease of discussion, the above measures will be referred to as academic success variables. All Fall 1981 incoming freshmen who participated in revenue-producing sports (N = 49) were administered the above tests. ACT and HSR were obtained from the university's admissions office.

The students' academic success was analyzed six years after their entrance into the university. Academic success was based upon the students' college GPA, how long they persisted within the university (LDOA), and whether or not they graduated.

The wide variety of academic success variables were used because of the differing opinions that surround the reasons for academic success or failure. The literature suggests that there may not be one single best predictor of academic success; however, a list of multiple acceptable predictors include admission test scores (ACT, SAT), HSR, and GPA, as well as reading test scores (Abrahms and Jernigan, 1984). However, there are still a great many factors that influence academic outcome of students that may not be taken into account by such scores (Baird, 1984).

The Nelson-Denny reading test is a timed test designed to measure student ability in the areas of academic achievement, reading comprehension, vocabulary development, and reading rate. In addition, the test is said to identify students who may need special help with their reading. The test is comprised of two subtests that measure adequacy of vocabulary and comprehension/reading rate. In a 1982 study, Wood found the overall reliability coefficient of the NDRT to be .91 (Wood, 1982).

The Brown-Holtzman Survey of Study Habits and Attitudes is designed to identify factors that are not necessarily related to scholastic aptitude scores but may influence academic outcomes (Brown and Holtzman, 1967). This instrument identifies students whose study habits are different from those who earn high grades, provides information useful in understanding students with academic difficulties, and serves as a basis for helping students improve their study habits and attitudes (Brown, F.B., and Holtzman, W.H., 1967). The SSHA yields seven scale scores: Delay Avoidance which measures promptness in completing assignments; Work Methods which measures student opinion of teacher classroom behaviors and methods; Education Acceptance which measures approval of education objectives; Study Habits which combines the Delay Avoidance and Work Methods scales to measure academic behavior; Study Attitudes which combines the Teacher Approval and Education Acceptance scales to measure scholastic beliefs; and Study Orientation which combines the Study Habits and Study Attitudes scales to provide an overall measure of study habits and attitudes.

Reliability studies of the scales have yielded different results. Brown-Holtzman's 1967 studies reported coefficients that ranged from .87 to .93 on the scales. However, a 1980 study revealed much lower reliability coefficients ranging from .65 to .88 (Bray, J.J., Maxwell, S.E., and Schmeck, R.R.).

The MSAT is designed to measure verbal ability and reading comprehension which consists of 78 items arranged in three sections: reading ability, same-opposites, and analogies. According to Dr. Wilbur Layton (of Iowa State University) who was instrumental in the development of the MSAT, the scales were found to have a reliability coefficient of .93, with the validity ranging from .30 to .70.

Sample

Forty-nine varsity male football student-athletes participated in this study. All were American citizens. A vast majority (71%) of the subjects were white, while 10% were black. Nineteen percent of the subjects did not identify themselves by race.

Analysis

Initially, means and standard deviations were computed on all of the variables used to identify academic success (ACT, NDRT, MSAT, SSHA, and HSR). Next, a Pearson correlation was conducted to assess the relationship between the subjects' GPA's and all of the academic success variables.

To determine the effects that each of the academic success variables may have on the length of time that the student persisted at the university, a one-way Anova was run using the independent variable LDOA, with each of the academic success variables. In addition, t-tests were run using the graduation status (graduated/did not graduate) and the academic success variables to determine the influence that each variable may have had on whether or not each student-athlete obtained a degree. T-tests were also conducted using race and the academic success variables in an attempt to identify any differences among the scores on academic success variables when compared by race. Data were analyzed using the statistical package of the social sciences. (SPSSX, 1985).

RESULTS

Pearson Correlation

The Pearson correlation coefficients indicated significant relationships between student-athletes' college GPA's and scores achieved on the MSAT, ($r = .28$, p.04) and Brown-Holtzman study orientation ($r = .45$, p.001). Strong relationships were observed between college GPA, and the Nelson-Denny vocabulary raw score ($r = .26$, p.04). Though not significant, the relationships between GPA and ACT ($r = .25$, p.059), between Nelson-Denny vocabulary and comprehension raw score ($r = 24$, p.06), and HSR ($r = -.27$, p.06) also appeared to be relatively strong. Though the correlation coefficient on High School Rank is negative, it represents a positive relationship because low numbers on this variable represent better scores (i.e., a HSR of 24 is better than one of 35).

One-Way Anova

No significant differences were found for any of the dependent variables with regard to LDOA. However, it appeared that on the Brown-Holtzman Delay Avoidance Scale, student-athletes who persisted beyond four years had considerably higher scores than those who stayed less than four years, (1 year or less = 14.33, 1 to 3 years = 15.20, 3 to 4 year = 10.57, 4 years or more = 21.20). Interestingly, those student-athletes who stayed at the university for three to four years had the lowest scores.

t-tests

The t-tests based on graduation status showed significant differences between those athletes who graduated and those who did not on the Nelson-Denny vocabulary raw score ($t = 2.51$, p.01), Nelson-Denny comprehension raw score ($t = 2.19$, p.03), Nelson-Denny vocabulary and comprehension raw score ($t = 2.63$, p.01), MSAT (t-2.46, p.03), and BHSO ($t = -2.00$, p.05). Generally, those students who obtained a college degree scored higher on the academic success variables.

Results of the t-tests comparing the race of football student-athletes with achieved scores on the academic success variables revealed that blacks scored significantly lower on all but one of the Nelson-Denny variables, and even that approached significance. Black student-athletes also achieved significantly lower scores on the MSAT. Interestingly, only one of the five entering black student-athletes obtained a degree, while sixteen of the thirty-five white student-athletes obtained degrees.

Discussion

In general, this study indicates that the academic preparation of student-athletes prior to entering college, as measured by a variety of variables, may have an influence on the academic success of these individuals. Though this study was limited by the small number of participants ($N = 49$), and the fact that all of the subjects were members of the same institution, it has strong implications that support the above theory. An analysis of the data showed that when compared on the basis of scores earned on various measures, those student-athletes who achieved higher scores were more successful in terms of college GPA, the amount of time they stayed in school, and whether or not they obtained a degree.

The significant positive relationships achieved on the MSAT and NDVRS suggest that stronger vocabulary combined with reading ability (particularly

comprehension) may have an impact on academic success. Findings from this study reveal that higher scores on these measures were associated with better college GPA's. This study also supports the common belief that scores obtained on traditional college predictors may be good indicators of a student-athlete's chances of performing well at the university level. A positive relationship was found between college GPA and ACT scores as well as HSR. As the scores on both of these variables improved, so did the student-athletes' college GPA's.

References

Abrahms, H.G., & Jernigan, L.D. (1984). Academic support services and the success of high-risk college students. American Educational Research Journal, 21, 261-274.

Baird, L.L. (1984). Predicting predictability: the influence of student and institutional characteristics on the prediction of grades. Research in Higher Education, 21, (3), 261-278.

Bray, J.H., Maxwell, S.E., & Schmack, R.R. (1980). A psychometric investigation of the survey of study habits and attitudes. Applies Psychological Measurement, 4, (21), 195-201.

Brown, W.F., & Holtzman, W.H. (1967). Survey of study habits and attitudes, New York: The Psychological Corporation.

Ervin, L., Saunders, S.A., Gillis, H.L., & Hogrege, M.C. (1985). Academic performance of student-athletes in revenue producing sports. Journal of College Student Personnel, 2, 119-124.

Thoamas, E. (1968). Role theory, personality, and the individual. In E. Borgatta and W. Lambert (Eds.). Handbook of Personality theory and research. Chicago: Rand McNally.

Underwood, J. (1980). Student Athletes: the sham, the shame. Sports Illustrated, 52, 36-72.