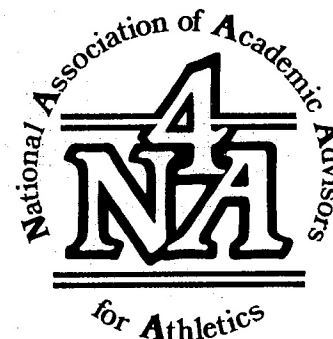


ACADEMIC ATHLETIC JOURNAL

The Official Publication of the
National Association of Academic
Advisors for Athletics



Published jointly by the Association
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SPRING 1988

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SPRING 1988
ISSN 0897-165X

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Evaluation of a Study Skills Program for Student-Athletes

By

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The purpose of evaluation research is to measure the effects of a program against the goals it set out to accomplish as a means of contributing to subsequent decision making about the program and improving future programming (Weiss, 1972, p. 4).

When occurring together, there are three elements that can define a problem-solving effort as evaluation research (Williamson, Karp, & Dalphin, 1977). The first element is that the effort has to occur in a real world setting. The second element is that the program to be evaluated is designed and aimed at improving the life situation of a specific group of people. The third, or final element, is that provisions be made to evaluate the program's success. Attending to the first two elements generally creates no major problems. However, defining the success of a program can be almost unattainable as the complications and complexities of program evaluation have been documented (Campbell & Stanley, 1963; Popham, 1975; Posavac & Carey, 1980; Scriven, 1967).

Today, many professionals are responsible for a number of organizational functions. One of the functions that may be included is the administrative duties of program planning, monitoring, and evaluation. According to Epstein and Tripodi (1977), program planning, monitoring, and evaluation are not separate entities but are interdependent and cyclic. These authors contend that: 1) sound program planning is a necessary precursor to effective program

monitoring; 2) valid and reliable monitoring information is necessary for effective program evaluation; and 3) competent program evaluation can serve as a basis for a new cycle of program planning and implementation. It is within the context of Epstein and Tripodi's concept that the following program exists and is reported.

PLANNING

Athletes Educational Planning Program

In response to an outcry from University professors and administrators regarding academics and athletics, the Athletes Educational Planning Program (AEPP) was developed. During the 1982-83 academic year the University of Toledo Counseling Center extended its voluntary study skills program to a specific University population - student-athletes (Danchise, 1985). The plan of the AEPP was to provide incoming freshmen male and female student-athletes with a traditional study skills program. A major goal of the program was to assist the freshman student-athlete in adjusting and in adapting to the academic rigors of a college environment through the utilization of study skills.

Assessment

Most college students can derive some benefit from a traditional study skills program. However, study skills programs are generally designed for students who have been academic underachievers or are considered to be academic high-risk students. To determine if there were academic high-risk student-athletes an assessment tool was developed. The Student-Athlete's Entrance Information Sheet (SEIS) was designed primarily to collect specific academic information regarding the student-athletes' pre-college academic performance (see Appendix A). The names of all incoming freshman male and female student-athletes, including non-scholarship athletes, were obtained from the University Athletic Department. Relevant academic data to complete the SEIS was obtained from the Admissions Office for each student-athlete. Also, any background information that was deemed pertinent to the student-athletes' academic performance was included. After the data was gathered and reviewed, each student-athlete was placed in one of four categories as shown in Figure 1.

CATEGORY	INDICATOR	CATEGORY MEANING
High-Risk	(-)	Needs Help
Moderate-Risk	(?)	Questionable Need
Borderline	(+ invite)	Probably Needs No Help
Low-Risk	(+)	Needs No Help

Figure 1: Assessment categories

The placement of student-athletes in specific categories was a prediction of initial college academic performance. All variables used to assess potential academic performance are important. The major variables used by the AEPP to predict academic success in a college environment were the American College Testing Program (ACT) individual and composite scores; the Scholastic Aptitude Test (SAT) individual and combined scores; 12 high school preparatory courses (H.S.C.); and high school grade point average (HSGPA). After all the student-athletes had been assessed and categorized, they were then randomly assigned to one of several small (8-15) groups.

Groups - Individual

Student-athletes met in their assigned groups each week throughout the quarter. The groups generally assembled in the evening for about one hour on different days of the week. During the sessions, student-athletes received the program's instruction along with discussing relevant issues and topics which they raised. In most instances, the groups were co-facilitated with at least one leader experienced in working with this particular population. Inexperienced group leaders were paired with experienced leaders. During the quarter, each student-athlete was scheduled to meet individually with the program coordinator.

STAFF: Recruitment - Training

The composition of the AEPP staff was both professional and paraprofessional. The staff members, or group leaders, were undergraduate or graduate

students who were enrolled in a human service curriculum. Group leaders could earn academic credit or a small stipend in exchange for their program involvement. Most often, the group leaders volunteered their time and services. New group leaders were orientated to the goals and objectives of the program at a program introduction that was held prior to the Fall Quarter. Once the quarter began, the AEPP staff met each week throughout the academic year. At the staff meetings pertinent issues and concerns of the group leaders were addressed. Also included at the meetings were other relevant topics and staff training. For example: the academic progress and the program involvement of student-athletes; new and/or different program materials; special techniques and strategies for program material presentations; group procedures and processes; confidentiality and other ethical and professional issues.

MONITORING

Program monitoring is the process which generates information regarding various program operations. More specifically, program monitoring tells the administrator how well program functions are being implemented. The intensity of the monitoring process will directly influence the amount of program information obtained. The AEPP staff had program participants complete an evaluation form at the end of each quarter (see Appendix B). At various points of the program, participants were often asked to provide feedback regarding different topics (see Appendix C). For example, at the midpoint of one quarter, program participants were asked to provide handwritten feedback regarding their perception of the AEPP. The responses, as written, were typed and distributed at the next AEPP staff meeting for evaluation. Evaluation revealed:

POSITIVE: 85% of the respondents used the word "helpful" or "liked" in reference to the program.

NEGATIVE: Less than 8% of the respondents said they did not believe they were benefiting from the program and thought their time could be used more productively.

NEUTRAL: Less than 8% of the respondents made neither positive nor negative statements. These respondents stated topics they would like the program to address.

Monitoring starts with the delineation of performance standards which are consistent with a program's goals and objectives. The quality and the quantity of a staff's performance can be measured against these standards. The information generated from monitoring procedures can aid in the decision to stop,

modify, revise, or to continue the delivery of a service or program. The collection of systematic, reliable, and valid monitoring information can be achieved through the utilization of questionnaires, interviewing, observation, forms, and sampling. These monitoring techniques generate information which allows the program's operations to be reviewed so that informed decisions can be made. The monitoring of staff can also be considered a resource. For example, the AEPP staff:

- developed new and/or different program materials.
- developed new techniques and strategies for material presentation.
- provided new and different methods and procedures for dealing with difficult situations or individuals.
- provided insight into the program's operation.
- brought innovation to the program.

EVALUATION

Program evaluation is the process by which a program's efficiency and effectiveness are assessed. Program efficiency is concerned with cost -- money, time, staff resources, and so on. Program effectiveness considers how successful a program or service has been in achieving its goals and objectives. During the Fall Quarter, a decision to evaluate the AEPP was made. The purpose of the evaluation was to determine if the program was having a positive effect on the student-athletes' academic performance. More specifically, "Was the intervention of the study skills program having a positive impact on the GPA's of student-athletes who participated in the program?"

To address the specificity of the question, program evaluation had to focus on program effectiveness. To meet the challenge of assessing program effectiveness, a comparison group was needed. Since the student-athletes had self-selected themselves into one group that voluntarily participated in the program and another group which decided not to participate, two natural groups had been formed. Because of the self-selection process, and because the two groups were similar in important background variables, it was reasonable to assume that if differences between the two groups emerged after the program was completed there was some justification in attributing the difference to the impact of the program. At the end of the Fall Quarter, student-athletes' GPA's were collected and tabulated. The mean GPA of the student-athlete in each category is shown in Table 1.

TABLE 1

Mean GPAs of the 1984 assessed freshman student-athletes by category

STATUS	(+)	(+ invite)	(?)	(-)	TOTAL
(m) NO SHOW (n)	3.006 (14)	2.283 (5)	2.169 (20)	1.833 (6)	45
(m) ATTENDED (n)	3.492 (5)	1.618 (7)	2.306 (26)	1.467 (16)	54
TOTAL	19	12	46	22	99

m = mean

n = number

(+) = low-risk (needs no help)

(+ invite) = borderline (probably needs no help)

(?) = moderate-risk (questionable need)

(-) = high-risk (needs help)

Low and moderate-risk student-athletes that participated in the program had a higher mean GPA than student-athletes in the same two categories who did not participate in the program. Borderline and high-risk student-athletes that participated in the program had a lower mean GPA than student-athletes in the same two categories who did not participate in the program. The mean GPA's in the last two categories, borderline and high-risk, were somewhat mystifying because the findings were contradictory to self-reports and observations. In order to determine if the program was having a positive effect on student-athletes' academic performance, it appeared that more than mean GPA's were needed. Therefore, analysis was expanded to include other academic variables. Also, the expanded analysis could reveal other phenomena operating among student-athletes that may be having a negative influence on their GPA's. Scrutiny of the borderline category revealed:

a) the major areas of study of the seven participants were: business (1); engineering (1); pre-med (2); physical therapy (2); and nursing (1).

b) one participant who earned an extremely low GPA did not return to the University.

c) another participant who earned a 0.153 GPA the first quarter earned a 3.187 the next.

d) all six participants who returned to school increased their GPA's the next quarter. The group mean GPA increased from 1.618 to 2.828.

e) the major areas of study of the five non-participants were: business (2); engineering (1); pre-med (1); and physical therapy (1).

f) the non-participants' mean GPA increased the second quarter from 2.283 to 2.604.

Analysis of the high-risk category revealed that 50 percent (8) of the student-athletes in this category who participated in the program had 2.000 GPA's or greater (mean = 2.539). Over 30 percent (5) of this group, the participants, had GPA's of zero (0.000). The impact of such a large proportion of a category having zero GPA's distorts the academic achievements of the other student-athletes in the same category. For example, elimination of the zero GPA's raised the mean GPA for the high-risk program participants from 1.467 to 2.143. Nevertheless, the zero GPA's do exist and issues related to their existence need to be addressed. It may be these student-athletes need more than the AEPP. Or, it may be these student-athletes need developmental or remedial studies. Or, it may be these student-athletes need to be seeking careers in which traditional higher education is not a prerequisite. In sum, an evaluation to determine if the AEPP was having a positive impact on the student-athletes' academic performances needed to include more than mean GPA's. Individual records and performances need to be considered and examined. The number, or percent, of student-athletes being helped or benefiting from a program or service need to be included. For example, it may be more important to know how many individuals benefit from a service rather than how much. In addition, student-athletes' beliefs and attitudes about a program, about the University, and about themselves should be included in an evaluation because they are essential for academic success. Continued analysis of the high-risk category revealed that:

- a) three participants left school near the end of their first quarter and never withdrew from classes.
- b) one participant dropped all his/her classes near the end of the quarter produced a zero GPA.
- c) two non-participants who earned low GPA's did not return to the University.

FINDINGS

After more than three years of operation and within the context of Epstein and Tripodi's (1977) concept, program evaluation indicates that traditional study skills alone do not adequately address the needs of student-athletes. The pre-college academic preparation and achievements of student-athletes is so diverse that traditional study skills programs, or segments of them, are meaningful only to a few (Whitner & Altman, 1986). The mean score of each variable, as shown in Table 2, has meaning per se. However, the range of scores of each measure reveals that there is great variation between scores. It is the variance between scores that makes a traditional study skills program inadequate for many student-athletes.

TABLE 2

Pre-college academic measures of the 1984, 1985, and 1986 incoming freshman student-athletes

MEASURE	ACT	SAT	HSC	HSGPA
AVERAGE SCORE	18.3	879.1	6.7	2.771
RANGE OF SCORES	1 - 31	540 - 1370	0 - 11	1.643 - 4.000
NUMBER*	251	89	298	307

* Number of student-athletes assessed each measure (includes walk-ons).

ACT - American College Testing Program composite scores.

SAT - Scholastic Aptitude Test combined scores.

HSC - High School Courses: maximum of 12 college preparatory courses.

HSGPA - High School Grade Point Average.

To provide a specialized academic service for student-athletes, it is imperative in the planning phase that program developers know the academic background of the target population. Knowledge of the target population's academic background allows program planners to delimit program rigidity by incorporating flexibility within the basic program design. Flexibility can be incorporated within a program by including additional program components and/or alternatives. The presence of readily available program options permits a program to be easily changed or adjusted in order to address specific needs of the program participants.

The AEPP has found that:

1. academically, student-athletes are an extremely diverse population.
2. program participants feel they benefit from the program. They enjoy talking about their experiences once a week.
3. program participants enjoy discussing University related procedures, issues, and concerns which they have personalized with someone they consider "University-wise."
4. the mean GPA of program participants are generally higher than non-participants.
5. counseling is needed for career exploration and career development.
6. counseling is needed for both academic and personal concerns.
7. specialized academic support services for student-athletes need to be University linking agents.
8. for data analysis, student-athletes records need to be categorized according to athletic scholarship amount.

CONCLUSION

Within the confines of a unique University, a specialized educational support service for student-athletes has been reported. There is no attempt to generalize the educational support service or to present it as a model. Program maintenance techniques and strategies are reported, along with program findings that have emerged after more than three years of work with academics and student-athletes.

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The Use of a GPA Prediction Formula to Better Prepare the Freshman Student-Athlete for College Academic Success - One School's Approach

By

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The selection of variables that predict college success has long been a focus for researchers in higher education. While many academic prediction models have used the grade point average (GPA) of freshmen college students, much debate continues about which variables best predict the college GPA.

Several researchers have investigated variables that best predict the GPAs of collegiate student-athletes. Brigham (1982) found that the ACT composite score was the best predictor of the GPA of black male student-athletes, while family income was identified as a good predictor for this group. For white male student-athletes, good predictors included ACT scores, high school grade point average and high school rank. When Mayo (1986) used high school class rank and ACT composite score to predict grade point averages, black student-athletes achieved at a lower level than predicted. When Mayo (1986) used high school class rank and ACT composite score to predict grade point averages, black student-athletes achieved at a lower level than predicted. While the black student-athletes' average high school rank was at the 53rd percentile, their average ACT score was under 14. Mayo concluded that the black student-athlete does well in high school but is not prepared for the ACT or to survive in college coursework.

Many times, student-athletes are admitted as special admission students. Gurney and Stuart (1987) found that freshman student-athletes who were enrolled as special admission students had lower GPAs than regularly admitted student-athletes but did remain in good standing at the end of the first academic year. They actually persisted at a higher rate than other freshman student-athletes. Cerra (1984) also found that student-athletes who were specially admitted were more likely to persist than to drop out. However, Cerra did not isolate variables that best predicted actual GPAs.

After reviewing the literature, the staff of the Total Person Program, the academic counseling unit of the Department of Intercollegiate Athletics, concluded that research findings could not be generalized specifically to the student-athlete population at the University of Missouri-Columbia. Therefore, with assistance from the Registrar's Office and Athletic Department records, academic data were gathered on all UMC student-athletes competing from 1980-85. The goal was to develop a prediction formula consisting of variables that best predicted first semester fall GPAs of freshmen student-athletes. The predictions could then be used to help advise appropriate academic coursework for the group, to identify and to assist the incoming high risk freshmen become better prepared academically and to help identify high risk candidates during recruiting. In a recent survey of 82 athletic directors of NCAA Division 1-A schools, the respondents reported that early identification of students who may experience academic difficulties and provision of a remedial course in basic skills could lead to improved academic performance and graduation rates (Julian, 1988). These conclusions verify our concerns for the need for this type of research.

The research project started by gathering data on 1,100 student-athletes competing on squads from 1980-85; 324 football student-athletes were included in this number. Variables included ACT composite score; all ACT subscores; high school percentile; high school size; race; hometown location; freshman or transfer status; scholarship status; fall UMC semester hours attempted and earned; winter UMC hours attempted and earned. The criterion variable was fall GPA. Winter GPA and year GPA were also included as variables in order to look at any significant correlations.

A multiple regression procedure was then used to generate a prediction formula that best predicted the fall GPA of the freshmen student-athletes. Five variables were found to be significant in predicting fall GPA contributing to an R square of .35; the variables were high school percentile, ACT English subscore, ACT natural science subscore, ACT math subscore and scholarship or non-scholarship status. ($F = 12.441$ p.0001.) The prediction formula is: $719.5 + 208.3 \times (0 \text{ if nonscholarship; } 1 \text{ if scholarship}) + 15.5 \times (\text{high school percentile}) + 15.8 \times (\text{Natural Science ACT subscore}) + 22.3 \times (\text{English ACT subscore}) - 11.82 \times (\text{Math ACT subscore}) \times .001 - .26$.

The five significant variable scores for the 23 freshmen football players entering in the fall of 1987 were then inserted into the prediction formula. The formula was computed for each player resulting in a predicted fall GPA for each one. The mean of the group's predicted fall GPA was 2.133. The mean of the football student-athletes actual fall GPA was 2.057. The mean of the difference of GPAs (predicted GPA minus actual GPA) was .079 and the difference between the means was not statistically significant.

Thirteen players were within a .50 difference between predicted and actual fall GPAs. Five of the GPA differences were within .25. Seven players had actual GPAs that exceeded their predicted GPAs and 16 players had actual GPAs that were under the predicted value. The formula was also computed for 17 freshmen football players entering in the fall of 1986 with similar positive results.

Although the prediction formula was accurate a few players had extreme differences between actual and predicted scores. The reasons for these differences were varied. Once the student-athletes' personality, family background, high school background and motivation level were known, a variety of factors were found that may have entered into an individual doing much better or much worse than predicted. Information gathered during recruiting and when the student-athlete first arrives on campus could eventually help refine the formula. Thus, a profile sheet was developed indicating distinctive features about the incoming student-athletes that might make an impact on their predicted fall GPA. For instance, attending a high school known for its high academic standards might result in a lower high school percentile thus lowering the predicted GPA.

Once an instrument had been developed to help determine the academic potential of student-athletes, programs were developed to address individual needs. Using the prediction formula, student-athletes are grouped into four categories: no or minimal risk; little risk; moderate risk and high risk. These categories are now used for five distinctively different purposes.

First, the categories are used for academic advising. Using the campus Freshmen Advising Guide as well as course grades for the last group of freshmen student-athletes, anyone predicted to fall into the moderate or high risk range are programmed into courses where they have a greater opportunity for success.

The second way the GPA prediction formula is utilized is to individualize the Study Skills Improvement Program. All freshmen student-athletes must take a study skills class. Typically, the students are divided into groups of ten. The class consists of basic study skills, time management, test-taking skills, dealing with test anxiety, library skills, computer skills, career counseling, and areas directly related to student-athletes such as working with the media and the freshman transition experience as student-athlete. Student-athletes predicted to fall into the low GPA range are put into sections where more individual attention is provided. The instructor selected to work with these groups check each student's class assignment completion and note-taking on a daily basis. Fortunately, one of the athletic academic support offices is located next to the dining hall in the football facility. Hence, it is easy for freshmen football and

basketball student-athletes to stop in with their work. Even though the study skills program formally ends in October, the instructor continues this daily check until the end of the school year.

A third application of the prediction formula is to help us decide which freshmen student-athletes need tutors. At the beginning of each semester, class schedules of all football and basketball student-athletes with marginal GPAs are evaluated and tutors are assigned for some or all classes. The same is done with freshmen, with the numbers of tutor groups required dependent upon the assessment of each individual's potential as well as the difficulty of fall class schedules. High risk student-athletes would very likely be assigned to a tutor group for every class. The only exception would be an English class where all student-athletes under concern would be assigned an individual English tutor. It is a Total Person Program policy that all English tutoring be done on an individual basis.

Next, the Coordinator of the Academic Progress Monitoring division makes use of the categories to assign the minimum number of hours per week that scholarship football and basketball student-athletes are required to be in either tutor groups or supervised study hall. A predicted high risk student-athlete might be required to have as many as 15 hours compared to a little risk student-athlete who may be only required to have six hours. The student-athletes are introduced to a system whereby they are responsible for securing the signature of all tutors and study hall supervisors to verify their participation in required study time. The time sheets are submitted on Friday afternoons with the new week beginning again on Saturday. After semester grades are reported, the Coordinator of Academic Progress Monitoring reviews the term GPAs and the assigned hours are adjusted if warranted.

The fifth way the GPA prediction model is employed is in the identification of those who might benefit from special learning workshops and individual diagnostic testing. High risk freshmen student-athletes are required to attend a two day reading improvement workshop. This twelve hour workshop dramatically improved reading speed and comprehension of the fall 1987 freshmen. Reading speed and comprehension improved 4-5 times their normal rate and the student-athletes enjoyed participating in the workshop and witnessing their quick improvement. In addition, the program employs a staff member trained in administering diagnostic tests to help assess individual strengths and weaknesses of the high risk student-athlete. After testing, the staff member develops any remedial instructional programs considered necessary. This staff member also confers with the individual tutors of the student-athletes tested and supplies them with remedial learning strategies that will better help the student-athletes to learn and process information. Special remedial work is performed by another staff member trained in remediation techniques.

By the end of fall semester, in most instances, the freshmen student-athletes have become much better prepared to succeed academically as they have been provided with a structure where they can organize themselves and complete school work assignments as well as participate in intercollegiate athletics. They become accustomed to the monitoring of their class attendance, tutor groups and study hall time and have accepted the serious academic environment at the University of Missouri-Columbia.

A process is now underway to educate the coaches in the uses of the formula in recruiting student-athletes with strong academic as well as athletic talent. The prediction formula could be a way to identify a four-year contributor as opposed to a recruit that will be a marginal student at best. Admittedly, in-state blue-chip talent, even if predicted to be a high risk student-athlete, will still be heavily recruited. However, we hope the prediction formula will start to be a useful tool for the coaches in making wise recruiting decisions.

Our approach may be a major reason that the grade point average of the football team is increasing at a steady rate, although the freshmen student-athletes' fall 1987 GPAs are still not at the level that we desire. It was hoped that this academic year (1987-88) the actual Fall GPAs would be higher than the predicted GPAs with there being a statistically significant difference between the means. Part of the problem may be that the predicted scores are slightly inflated because student-athletes often take the ACT and SAT multiple times while they are in high school thus decreasing the predictive strength of these variables. Also, the high school class rank of some student-athletes from educationally sub-par inner city schools may result in a higher predicted GPA. The prediction formula must now be refined by studying the last two years of freshmen student-athletes with emphasis on how high school core course GPA, as well as several other demographic and behavioral variables contribute as predictors. Also, there is a need to examine the effect of Bylaw 5-1-j on our prediction formula.

Finally, our prediction formula was developed within the environment of the University of Missouri-Columbia. Because of the variability among educational institutions, our formula may not be universally useful. Although the formula may serve as a guideline, each institution needs to engage in research in order to develop its own GPA prediction formula useful in program development.

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Grade Improvement by Academically Endangered Student-Athletes Following Brief Study Skills Training

By
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Abstract

Ten academically endangered male student-athletes were offered ten 2-hour classes designed to train college study skills (memory techniques, taking notes from texts and lectures, and preparing for and taking exams). Attendance was voluntary. Six attended regularly, tried to learn the skills, and subsequently earned (in their concurrent courses) a semester GPA which was a full letter grade above their cumulative GPA prior to the training. Statistically, this GPA gain was significantly higher than was the slight loss shown by the four who did not attend regularly and did not try to learn these study skills. It was recommended that all entering student-athletes be given training in effective study skills before academic problems arise.

The problems associated with academically unprepared student-athletes entering our institutions of higher learning is the subject of increasing attention in both the popular press (Axthelm, 1980; Underwood, 1980) and the academic press (Hanford, 1979; Wittmer, et al, 1981; Ervin, et al, 1985; Weistart, 1987). While recognizing the widespread academic failure rate among student-athletes, noted sports activist and sociologist, Harry Edwards (1984) succinctly argued that "dumb jocks are not born; they are systematically created" (p.8). We agree and disagree.

Realistically -- as with any student group -- there may be some "dumb jocks" who never will succeed in academics. But they probably will not succeed in athletics either because of the intellectual demands of first-class athletic competition. A successful athlete must master numerous complex formations or plays, organize such information conceptually, develop principles on which to

act, quickly interpret subtle information on the playing field and select a precise response strategy. These are the acknowledged cognitive skills needed for academic survival. If anything, therefore, successful and nationally recruited athletes should be at least as "intelligent" as the general student body and should have no more problems with typical undergraduate courses.

Undeniably, however, the student-athlete does have more than his/her share of academic problems. One major reason, we feel, is not so much that the athlete's poor academic ability has been "created", but rather that his/her academic ability has suffered benign neglect. Simply stated, no one has ever shown the athlete how to be good in the classroom as on the field. As Henderson & Weber (1985) emphasize in their book on this topic, successful academic performance depends upon academic skills learned and practiced by the student-athlete. The following is a report on an initial and successful attempt to teach student-athletes the study skills necessary for academic success.

Method

Subjects

The ten most academically endangered student-athletes (8 football, 2 basketball) were selected from among those attending a mandatory 16-hour per week study table program which was supervised by author Mand. These male students all had low cumulative Grade Point Averages (GPA) earned in either Freshman or Sophomore years.

Procedure

During the first half of the Summer Semester the class met ten times, Monday & Wednesday, from 1:30 to 3:30 PM. Although taken, attendance was not stringently enforced (as was attendance at the regular study program) in order to encourage voluntary participation in this initial offering to student-athletes.

Developed and delivered by author Fletcher, this practical approach to the development of efficient study skills is based upon current cognitive learning theory, and the material is a regular feature of his course in Educational Psychology.

The first topic, mnemonics, was introduced with a demonstration. After the students generated a list of 20 items on the chalkboard, the instructor returned to the room, faced the students, and was read the list. To prevent any rehearsal, he immediately discussed memory techniques while not looking at the list. After a few minutes he recalled the list perfectly, giving the item of any randomly asked number. Explaining the ease of such memorization or arbitrary information by using the peg word method, the instructor distributed a list of ten peg words (number with an easily visualized word to be associated with the number) to be memorized. During the next class, the students were given practice in using their peg words to learn a new list of ten arbitrary items. Other mnemonic techniques (verbal and visual) were discussed and illustrated.

To test their learning of mnemonic techniques, the student-athletes were given a list of ten cranial nerves and associated functions to memorize by number (e.g. 1 olfactory for smell, 9 glossopharyngeal for taste). The next day they were given a 22 point quiz on the number, name and function of the nerves.

The second topic was how to learn from lectures. The lecturer described how to take efficient temporary notes, how to reorganize and summarize those notes permanently and how to review those summary notes. Student-athletes were not provided any practice in note-taking skills, but they were given a quiz on the characteristics of good lecture notes. The third topic, how to learn from texts, was covered more extensively. The students were shown first how to preview a section of text for overall organization of ideas, how to actively read for essential information, and how to highlight important information and make marginal notes. Then they were shown how to summarize text material efficiently with tables and hierarchically structured notes. Finally they were advised to review only their notebook summaries.

A public relations brochure describing the university was used to illustrate previewing and reorganization of information in notes. A brochure describing a previous basketball team served to show how complex information can be systematically and succinctly summarized in tables. Material concerned with human decision-making provided practice in reorganizing information temporarily, in identifying the more general concepts discussed, and in the use of mnemonics.

As a final exercise in learning from texts, the student-athletes were given five pages from a current educational psychology text on the subject of intelligence. They were told to study the material and to make notes. At the next session the instructor distributed his own typed one-page summary of that information as an example of how to reduce information and to show how brief notes can aid recall of complete information provided that the information had

been studied and reduced appropriately. The student-athletes were then told to study again the five pages and the summary in anticipation of the next meeting's quiz which included matching, multiple choice and fill-in items.

The fourth topic, how to prepare for and take exams, was discussed but no practice or quiz was given. The instructor recommended always preparing for an essay exam (because it requires organized information) and frequent self-testing prior to any test (using the method of free-recall of hierarchically organized information). When taking an essay exam, the students were urged first to underline the key words in the question in order to understand what the question is and what answer is expected in view of instructor bias or text emphasis. They were then advised to outline a complete answer before writing the word. When taking a multiple choice exam, the students were urged to note the key words in the question stem and to select the answer most relevant to those key words. They were strongly advised to skip immediately any question which they could not answer because, as so often happens, the answers to other questions will elicit the answer to the one skipped. They were told how to identify answers which are grammatically or conceptually inconsistent with the question stem. Finally, they were advised to avoid last-minute changes in answers.

As a final exercise on the last meeting, the instructor placed on the board the population data of the seven largest cities, a state's five leading agricultural products, and the sequence of the nine planets. The students were encouraged to offer mnemonics for learning the information, and the instructor offered some. The students were then told to study their notes (information was erased), and in a few minutes they were given the fourth quiz which required recall of the cities/populations, products and planets all in rank order.

Results and Discussion

With no reasonable control group available, our original intention was to compare the student's cumulative Grade Point Average (GPA) before training to their summer semester GPA (earned in the various courses taken concurrently) in order to test for a significant gain. However, it became clear that some of the student-athletes soon lost their motivation: their attendance was irregular; their attention was poor; and they seemed unconcerned about poor quiz performance. We decided, therefore, to categorize as "trained" student only those who took at least three of the four quizzes and averaged at least 50% correct on the quizzes taken.

This arbitrary classification, made before current semester GPA scores were known, resulted in six trained student-athletes -- who should have learned

techniques for improving their normal course grades -- and four untrained student-athletes -- who represented a reasonable control group because they were originally selected for the program, were treated identically, but were functionally nonparticipants in the actual study skills training exercises.

As in any quasi-experimental design, self-selection into experimental and control groups can bias the groups in ways which prevent meaningful comparisons of performance. Most importantly in the present case, it is possible that the academically least capable student-athletes constituted the untrained group. The data suggest exactly the opposite conclusion. As indicated in Table 1, the median cumulative GPA of the untrained student-athletes was higher (1.94 versus 1.82) prior to the study skills program. Moreover, the attending untrained students performed better on the first quiz (70% versus 62% correct). If anything, therefore, the four untrained student-athletes had academic ability equal to or better than the six we classified as trained students.

The quiz data in Table 1 also confirms the group designations. The untrained group performed very poorly on quizzes two and three, and none of them attended the last review session during which quiz four was given.

Most importantly, the trained students earned better grades in their courses completed after the study skills training (median semester GPA of 2.62 versus 1.72) with five of these six athletes showing GPA gains while all four of the untrained athletes had losses in GPA. These GPA gain scores were analyzed to test the directional hypothesis that athletes trained in study skills will have better grades than will untrained athletes. The probability of so extreme a distribution of five out of six positive gains versus four negative gains was .029 according to the Fisher Exact Test, a nonparametric test chosen because one unusual score precluded parametric testing.

Interestingly, the sole GPA loss among trained athletes was from the best student during the trained classes. A meeting with the student revealed that his personal social problems became so disrupting that he was on the verge of quitting school. His semester GPA was 3.7 standard deviations below the mean of the other five trained students ($p < .001$). Thus his semester GPA score is an anomaly which can be rejected as a statistical outlier or deviant observation. Without this deviant score, the median GPA gain was 1.09 for the trained athletes, and the Fisher Test indicated a probability of .005 for the distribution of five positive gains versus four negative gains.

Either analysis supports the conclusion that this short 10-hour study skills training will increase course grades of academically endangered athletes by about a full letter grade -- provided that they are motivated enough to try to learn the techniques.

Recommendations

All of these student-athletes were also in an enforced supervised program (with tutors as needed). While such enforced study programs may be helpful they tend to perpetuate the practice of ineffective study habits. We recommend as an alternative, or at least as a supplement, the adoption of programs which train effective study skills.

Moreover, these programs should be mandatory for all entering student-athletes before some become academically endangered. Because student-athletes simply do not have as much time to devote to course work as do other students, it seems imperative that the athlete be taught immediately how to be most efficient with his/her available time for study. Once learned, the techniques proposed here will decrease the amount of time and effort necessary to learn course material. Indeed, as the instructor emphasized, the goal of a good student is not to work harder, but to work smarter, at studying.

Table 1

Median GPA data and mean quiz performance data of 10 academically endangered student athletes in a study skills training program.

	Cumulative GPA Before	Percentage Correct				Semester GPA After	GPA Gain
		Quiz 1	Quiz 2	Quiz 3	Quiz 4		
Trained	1.82	62	60	64	97	2.62	+1.02
n	6	6	3	6	5	6	6
Untrained	1.94	70	17	30	--	1.72	-0.11
n	4	3	3	2	0	4	4

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Student-Athletes as Peer Counselors

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Abstract

An innovative pilot project of peer counselors is implemented within the structure of an educational support service. Student-athletes helping other student-athletes to adjust and adapt to the rigors of a college environment is reported. The rationale for utilizing student-athletes as peer counselors, the measures taken to control the disadvantages which have been reported to be associated with their use, the pilot project's outcome, and recommendations for future use of student-athletes as peer counselors in educational support services are included.

Peer counseling programs are becoming important student services on college campuses where students are helping each other and themselves in many imaginative ways. (Giddan & Austin, 1982, p. 3)

People have needed help, support, comfort, and assistance from fellow human beings throughout history. Individuals in need, for the most part, have found that assistance through a natural support or folk-system -- a self-help network of paraprofessionals that consist of friends, neighbors, relatives, and community. Historically, Hobbs (1964) traced the utilization of paraprofessionals to a therapeutic philosophy which evolved during the late eighteenth century and was known as moral treatment. Since that time, paraprofessionals' utility and value have been documented (Gartner & Riessman, 1977; 1984).

In America, the tradition of paraprofessionals can best be seen in the origins of such programs as Alcoholics Anonymous, Synanon, and Parents Without Partners to name a few. The paraprofessional or self-help concept encourages individuals who have similar backgrounds, experiences, and concerns to work together without professional intervention in order to resolve difficulties. The process of self-help builds on an individual's ability to accept responsibility and to persist in providing and in utilizing mutual aid (Katz & Bender, 1976). Over time, paraprofessionals have evolved as important adjuncts to the work of professionals and, in many cases, have emerged as the result of inadequate resources of the lack of interest by the professional community.

PROGRAM BACKGROUND

Universities that accept marginal and underprepared students have responsibilities to those students. One responsibility that universities have to the academic high-risk student is to provide developmental or remedial coursework. Another responsibility is to provide special academic support services. The Counseling Center at the University of Toledo began offering a special academic support service (study skills seminars) to all University students during the 1979-80 academic year (Danchise, 1985). In 1982 the service was extended to a specific University population -- student-athletes. Because the student-athletes' study skills seminars met separately, and because the seminars had to be adapted and modified to meet the specific needs of the target population, the student-athletes study skills seminars eventually evolved into the Athletes Educational Planning Program (AEPP). The primary mission of the new educational support service was to assist freshman student-athletes to adjust and adapt to the academic rigors required of a college environment. To meet this challenge, the expertise of the University Counseling Center's staff regarding study skills was called upon. As the fledgling program labored with growth and development, doctoral and master level students majoring in the behavioral sciences were recruited as group leaders. In addition, a training program was developed. Eventually, demands dictated that a program coordinator be hired.

As the AEPP progressed, it became apparent that the needs of all student-athletes were not being met. Whitner and Altman (1986) contend that providing a specialized educational support service to a specific university population may be a greater task than anticipated. The developers of AEPP were cognizant that the diversity of a target population's academic background would dictate the necessity to have academic information that would describe the program participants' previous academic achievements. Knowledge of the

program participants' previous academic achievements would directly influence the amount of flexibility that the program developers would need to incorporate into the program's basic design.

Pre-college academic information regarding each student-athlete had previously been collected. The data had been used to predict academic success. A decision was made to reexamine and reevaluate this data. Collectively, the major academic achievement measures used to predict academic success are shown in Table 1.

TABLE 1. Pre-College Academic Measures of the 1984, 1985, and the 1986 Incoming Freshman Student-Athlete.

	ACT	SAT	HSC	HSGPA
AVERAGE SCORE	18.3	879.1	6.7	2.771
RANGE OF SCORES	1 - 31	540 - 1370	0 - 11	1.643 - 4.000
NUMBER*	251	89	298	307

* Number of student-athletes assessed each measure (includes walk-ons).

ACT - American College Testing Program composite scores.

SAT - Scholastic Aptitude Test combined scores.

HSC - High School Courses: maximum of 12 college preparatory courses.

HSGPA - High School Grade Point Average.

The mean score of each measure has meaning per se. However, it is the range of scores of each measure that have intrinsic value. With the knowledge of the extreme educational achievement backgrounds of the student-athletes, a new goal was developed because study skills alone were not meeting the needs of all program participants. The new goal was to assist all freshman student-athletes with the total educational transition from high school to college -- not just skill development. A three-year study by the Carnegie Foundation (Rae, 1986), reported that the discontinuity between high school and college created the greatest problems for most college students. To assist student-athletes in this problem area, the program would increase its scope by providing freshman student-athletes with information regarding: a) how to use and interpret the college literature; b) how to avoid pitfalls when registering for classes; c) how to balance a course load (course recommendation, not academic advising); and d) how to utilize the library. In addition, appropriate academic behavior (Wil-

bur & Wilbur, 1986) would be discussed, along with the availability of other University educational support services (reading, writing, and math labs; developmental and remedial classes and programs; tutors; etc.) Also, career exploration and development would be made available as well as individual and personal counseling. In general, the program could be viewed as an orientation on how to educationally survive at the University.

As the program participants' needs were more clearly defined, the program goals and focus had shifted and expanded. The question of how to best meet these changing needs was raised. Priorities and the lack of resources induce creativity.

PEER COUNSELORS

The evidence for the use of paraprofessionals as helpers is largely favorable. Durlak (1979) reviewed the comparative effectiveness of paraprofessional and professional helpers in 42 studies. The review started a controversy that resulted in rereviews and critiques of the same 42 studies (Durlak, 1981; Hattie, Sharpley & Rogers, 1984; Nietzel & Fisher, 1981). Based on a box score analysis of these diverse studies, Durlak found that paraprofessionals achieved outcomes equal to or significantly greater than those obtained by professionals. To be more specific, there were no significant differences among paraprofessionals and professionals in 28 of the studies. However, paraprofessionals were significantly more effective in 12 of the other investigations. Durlak's review favored the paraprofessionals, which was later supported by the meta-analysis procedures used by Hattie et al. (1984) who stated, "...the present review has clarified many aspects in the debate between Durlak and Nietzel and Fisher. Based on the studies reviewed by those authors, an overall conclusion from the 154 effect sizes is that paraprofessionals are at least as effective and in many instances more effective, than professional counselors." (p. 540)

A number of experts believe that college students make the best paraprofessional helpers (D'Andrea & Salovey, 1983; Ender & Winston, 1984; Giddan, in press; Giddan & Austin, 1982) and, in general, agree that there can be a number of disadvantages associated with their use. However, evidence of student-athletes functioning as peer counselors (helping other student-athletes) could not be found in the literature. Therefore, the general disadvantages of using college students as peer counselors were examined. The major salient disadvantages of using college students as peer counselors were determined to be that:

1. professionals should be the providers of service.
2. peer counselors are not sufficiently knowledgeable or trained properly to help others.
3. peer counselors represent the "blind" leading the "blind."
4. peer counselors tend to blame the "victim".
5. peer counselors tend to project their own problems onto others.
6. peer counselors are too easily coopted or exploited personally, vocationally, or financially.
7. peer counselors do not have professional commitments, ethical principles, or vocational identifications to guide them.
8. programs are not sufficiently comprehensive and are too brief to produce a well-trained peer counselor.
9. peer counselors have ambiguous roles, difficult to specify, define, and explain.

The positive aspects of utilizing student-athletes as peer counselors in order to assist other student-athletes achieve educationally were obvious. Thus, the task at hand was to formulate a strategy that could be implemented which would reduce or eliminate the perceived disadvantages of using college students as peer counselors.

PILOT PROJECT

After scrutinizing and evaluating the major salient disadvantages of utilizing college students as peer counselors, a decision was made to implement a pilot project. The decision was based on two beliefs. One belief was that the major disadvantages of using college students as peer counselors could provide incoming freshman student-athletes with valuable insights regarding the process of adjustment and adaptation to a college environment. As role-models, the peer counselors could share their experiences and their acquired University survival skills. The reality of "this is how to" information from a peer could have lasting effects.

The pilot project would consist of one or two peer counselors in each seminar group. The peer counselors would be paired with an experienced group leader in order to complement each others' expertise and to enrich the total group experience. To be a peer counselor the student-athlete had to have been a former program participant with a proven academic achievement record. Peer counselors would be required to attend all AEPP staff meetings and all training sessions. In addition, as an incentive, peer counselors could earn course credit or a small stipend if all required rules and guidelines could be met.

The rationale for structuring the pilot project in such a manner is that it allows the major disadvantages listed above to be controlled. Pairing of the peer counselor with an experienced leader, and the peer counselor selection process, controls for disadvantages One through Six, and has a positive influence on the other three. The selection of former group members would also help control for disadvantages Two, Three, and Eight. The only anticipated problem areas were disadvantage Seven (professional commitment, etc.), disadvantage Eight (training) and disadvantage Nine (role-definition). These three disadvantages could easily be addressed. Numbers Seven and Eight could be resolved in the training sessions, and number Nine by verbal and written explanations and definitions of the peer counselors role to staff, coaches, and program participants.

RECRUITMENT

Contact was made with several potential candidates who were advised of the intent to utilize student-athletes as peer counselors. Six (three female and three male) candidates responded and were interviewed. All six candidates said they wanted to be involved in the program. Each of the candidates believed that their experiences would be a valuable asset to the program. Five (three females and two males) of the potential peer counselors made formal commitments to the program.

FALL 1986

With the addition of the pilot project, the AEPP began the 1986 academic year with high expectations. Each year the young program had gained trust and respectability as its credibility increased among student-athletes, coaches and other University professionals. The addition of peer counseling was expected to have an immediate positive impact on the areas of decreasing resistance, building trust, and providing valuable academic information. The long term effects of the program were thought to be increased retention and higher graduation rates of student-athletes. The peer counselor pilot project was implemented at the beginning of Fall Quarter 1986. The pilot project officially ended two quarters later -- Winter Quarter, 1987. Unofficially, the project died during the middle of the 1987 Winter Quarter.

PROBLEMS

Almost immediately, during the pre-group training phase of the program, one of the five peer counselors left the program. By mid-quarter, the exodus of two others had occurred. Three weeks into the Winter Quarter the remaining two peer counselors reported that other commitments and problems with their schedules made it difficult to attend all the program's mandates. Two additional weeks of sporadic involvement by the peer counselors resulted in a decision to terminate the project at the end of the quarter.

Even though precautions had been taken to control the disadvantages of using college students as peer counselors, the pilot project failed. Unanticipated problems were the project's demise. In retrospect, the unanticipated problems began to manifest themselves at the program's onset. However, it was not until the eighth week of the first quarter during a self-report that underlying problems of the pilot project surfaced to a conscious level. Follow-up interviews with the peer counselors and feedback from program participants confirmed the earlier reports of certain beliefs, perceptions, and fears regarding the peer counselors.

The disadvantages listed hereinbefore were controlled through additional training, the recruitment and selection process, and the pairing of peer counselors with experienced group leaders. The pairing was a complementary experience. However, it allowed the group leader to observe and have command of the group experience. Therefore, only a few in-group incidents were reported. The incidents were minor and appropriately handled. The in-group interactions were not a problem. The problems of utilizing student-athletes as peer counselors in an educational support service occurred outside the groups.

GLOBAL

The peer counselors were perceived by many of the upper-class student-athletes as "traitors." Someone who could not be trusted because they (peer counselors) would side with the authority figures. Personal friendships were tested and strained. Some of the peer counselors began to experience a sense of isolation. They had a fear of being treated by other student-athletes as outcasts. In some cases the peer counselors were called names or labeled "pet".

FRESHMAN STUDENT-ATHLETES

The incoming freshman student-athletes did not think of the peer counselors as a bridge to a new environment (through the provision of skill instruction and general campus information). Nor, did the freshmen perceive the peer counselor functioning as an agent of change by modeling appropriate academic behaviors. The freshman student-athletes were not aware that a covert function of the peer counselors was to help expedite the entire high school to college transition through the breakdown and elimination of resistance.

Besides the global negative reactions to the peer counselors that was mentioned hereinbefore, many of the incoming freshman student-athletes were uncertain or suspicious of the actions and motives of the peer counselors. Some of the freshmen believed that peer counselors were there to "spy" or "trick" them, or to send "secret" or "special" reports to their coaches. Many of the student-athletes were sensitive to the notion that peer counselors may have access or knowledge of their past academic achievements. Also, the question of what happens if a peer counselor gets caught up in a momentary crisis (e.g., over react to something that is said or done by a group member)? In addition, what happens when a peer counselor loses perspective and balance -- takes on or assumes the role of a professional or an authority figure and begins to order, dictate, demand, and threaten other group members outside the group? Instead of being a buffer between the student-athlete and the authority figures, the peer counselors, to a degree, seemed to have increased the resistance, the distance, and the hostility.

In the beginning, many of the freshman student-athletes were looking for a sense of affiliation, a reference point. Someone who could relate to their world views and expectations. They wanted to have a conscious belief that they are known and cared about by some knowledgeable person in a bewildering environment. The concept of peer counseling for student-athletes was intended to promote honesty, mutual support, and lower defenses. Peer counselors were to provide feedback into a larger helping system so the appropriate program changes could be made in order to meet the needs of the target population.

RECOMMENDATIONS

The question of peer counselors as valuable tools in the helping profession is not the question. The question is whether peer counseling works for certain populations -- specifically, student-athletes. To address this question,

programs that utilize student-athletes as peer counselors in educational support programs need to be documented. The documentation needs to include a component to determine what relationships exist outside the confines of the program for both participants and the peer counselors. If no existing programs exist, pilot projects or programs could be implemented with caution. However, it seems more feasible to utilize other college student populations as helpers and avoid the risk of destroying friendships or harming individuals. The proximity, commonalities, and camaraderie of student-athletes make it difficult to separate or divide them. College athletes have grown and developed, both mentally and physically, under the strict discipline of an authority -- but, they respect it. This is why they are college student-athletes. To voluntarily take on a role which identifies with authority may be against the nature of most college student-athletes.

The utilization of student-athletes as peer counselors occurred within the context of a specific University environment and the problems that arose may be unique to the specific institution. Also, the problem of utilizing student-athletes as peer counselors may be unique to the particular population, or unique to the particular type of program, or it may be the particular personalities of the individuals involved. Perhaps all of the problems mentioned were working in concert. Nevertheless, the problems may serve as a caveat for other professionals who are planning to utilize student-athletes as peer counselors or planning to implement similar programs.

SUMMARY

Within the structure of an educational support service a pilot project that utilized student-athletes as peer counselors is reported. The major disadvantages of using peer counselors and the measures taken to neutralize them are discussed. The projects's impact and outcome, along with unanticipated problems and recommendations are presented.

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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 skills and 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.

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The Genesis of a New Profession: Athletic Academic Counseling

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The ancient Greeks with their maxim "sound mind in sound body" expressed their position about the importance of physical activity in the educational system. They were also the first society to glorify athletic achievement, a legacy and tradition that are still important to us (Ryan, 1981).

A unique characteristic of today's American sports, when compared to other nations where sports are organized by the armed forces or private clubs, is that they are sponsored by academic institutions. In the late 1800's American college sports were organized in clubs and played for fun and leisure. During the current century, colleges discovered that funding and supporting highly competitive and winning teams could provide significant profits (C. Underwood, 1984).

In an attempt to protect student-athletes and promote amateur intercollegiate athletics, the National Collegiate Athletic Association (NCAA) was founded in 1906. The NCAA's fundamental policy states that: "A basic purpose of this Association is to maintain intercollegiate athletics as an integral part of the educational program and the athlete as an integral part of the student body . . . to encourage its members to adopt eligibility rules to comply with satisfactory standards of scholarship, sportsmanship and amateurism" (NCAA Manual 1986-87, p. 5).

College athletics took a dramatic turn with the introduction of television, the basic agent in the rapid expansion of commercialization and profit-making. Rapidly, intercollegiate sports became "big business". Profits generated by football and basketball helped finance a larger part of the athletic program of many universities (Michener, 1976).

Unfortunately, in this process the student-athlete has been neglected academically and in some instances exploited (J. Underwood, 1979). When student-athletes earn athletic scholarships, they sign a contract which binds the institutions to provide them an opportunity for a quality education in exchange for their representing the university on the playing field. But student-athletes

are neglected educationally when they are not given the time to study or the academic support to succeed (McAllister, 1985). Student-athletes are also exploited athletically when their training program pushes them beyond their natural capacity (Shaw, 1972). Further, most colleges' strong desire to win has gone beyond the playing field boundaries. An endless list of recruiting, academic and financial aid abuses (Underwood, 1980; Biemidler, 1983; Williams, et al., 1985; Bowen, 1985; Leonard, 1986; Hanford, 1979; Kirkpatrick and Keteyian, 1985; Edwards, 1985; Reid, 1986) have been highly publicized because student-athletes have been hurt educationally and emotionally. Once their college athletic careers are over, many of them have few academic skills with which to earn a living and pursue their desired careers (Bayles, 1986; Marantz, 1987). Without these skills, the former student-athlete becomes frustrated, and his or her self-esteem is highly diminished (Kelley, 1981 in C. Underwood, 1984).

The highly publicized abuses have been a constant threat to the integrity of higher education. These abuses shadow an institution's academic image and contradict the university's commitment to ethics, honesty and scholarly classwork. For example, at the University of Georgia, an English professor was dismissed for resisting pressure to give passing grades to student-athletes taking remedial courses. She sued the University and won, and was awarded a large sum of money in the settlement. This scandal forced the president of the university to resign (Sack, 1986). To avoid the recurrence of such scandalous situations, the NCAA has adopted stricter academic standards such as Proposition 48 and the Satisfactory Progress Rule. Also college presidents have stepped in to assert more control (Williams, et al., 1985). As a consequence, many universities have hired professional academic counselors to work exclusively with student-athletes.

Formal recognition of athletic academic counseling occurred when a group of athletic academic counselors founded the National Association of Academic Advisors for Athletics (NAAAA) in 1976. The purpose of this association is "to cultivate and improve the opportunities for academic success for student-athletes in universities and colleges by providing informed, competent and holistic advising" (NAAAA constitution, 1985, p. 41). In the past two years membership in the association has doubled. Presently there are 346 members (Monaghan, 1985).

In an attempt to keep up with this swift growth, the association has upgraded its biannual publication to a professional journal called the Academic Athletic Journal. The association has adopted a goal to establish itself as a professional nonprofit organization (Esquinas, 1986). A certification program and a code of ethics are also being studied (Lashbrook, 1986, Athletic Advisor, 1986).

The fast growth described above has resulted in the need for an enhancement of the association's credibility. In order to maintain and increase credibility and to ensure survival, we may reasonably assume that association members in all regions must have the following: (1) Support of the university's administrators and faculty and the appropriate resources to enable them to perform their duties accordingly. (2) Respect as professionals from the university community. (3) Status necessary to introduce new ideas and challenging plans of action.

Once the above are provided in each institution, members must develop the following within the association in order to strengthen the profession nationally:

1. Identification

Members of the association must be secure in their knowledge that professionals in their field will have similar duties and work atmospheres, as well as aware that others have similar problems. This creates cohesiveness within the association, producing the energy and pride necessary to strengthen professional identity.

2. National Communication Network

Active and regular communication among members of the association will provide exchanges of information. A national communication network will heighten the probability of future growth and stability of the association.

In addition to these principles, athletic academic counselors must make an effort to provide services above and beyond the present scope of their duties. In keeping with the holistic approach inherent in athletic academic counseling, athletic academic counselors must assist student-athletes with their psychosocial development in order for them to become role model citizens. To reach such a goal requires an interdisciplinary model encompassing faculty, administrators, coaches, trainers and others involved in the university community.

Based upon the previous statements, we may conclude that the essence of athletic academic counseling is to provide student-athletes with an opportunity to acquire the academic and social skills necessary to enable them to pursue their desired careers. In achieving these goals, athletic academic counselors must use an interdisciplinary approach and earn the professional credibility that will allow them to gain the support needed to assist student-athletes. This credibility may be argued to rest upon professional identity and a national communication network.

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