

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

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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/hers 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/hers 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" students 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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