

A Subjective and Objective Process for Athletic Training Student Selection

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Context: Admission decisions are made annually concerning whom to accept into athletic training programs.

Objective: To present an approach used to make admissions decisions at an undergraduate athletic training program and to corroborate this information by comparing each aspect to nursing program admission processes.

Background: Annually, athletic training students are accepted into athletic training programs based on a variety of criteria. Little is known concerning what criteria are useful when making these decisions. The goal is to admit students who will successfully matriculate through the program and become athletic trainers with state-specified credentials for practice.

Synthesis: We present an application process that uses both subjective and objective measures, including an application form, achievement in prerequisite course work, grade point average, directed observation with preceptor evaluation, essay, admittance exam, interview, and letters of recommendation. This approach was compared to processes used to admit undergraduate baccalaureate nursing students.

Results: Although some of the information presented in the nursing literature is conflicting, there is sufficient evidence to support the use of a multifaceted approach to admission decisions. The approach presented has helped us reduce student attrition and select students who are more likely to complete all program requirements and sit for the Board of Certification examination upon program completion.

Recommendation(s): Include a variety of measurements to inform admission decisions.

Conclusion(s): Using a variety of measurements affords a more holistic view of the candidate without relying too heavily on any one component.

Key Words: Program admission, application, enrollment

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INTRODUCTION

Each year, across the nation, students apply for and are admitted into undergraduate professional athletic training programs (ATPs). Routes of admission vary from direct admission to variations of a secondary selective admission process. In direct admission, students are admitted into the ATP as part of their college or university admittance, while the secondary selective admission process requires a second application in the first or second year of enrollment. The purpose of this paper is to provide an overview of the secondary selective admission process that we have used and modified at the undergraduate level over the past decade. We also compare each aspect of the secondary selective admission process we use to data from nursing to corroborate our approach. We believe that understanding our process can be beneficial to other undergraduate ATPs by providing guidance as to important criteria to include when making student admission decisions. Prior to the adoption of this method of program application, we experienced significant student attrition and a large number of students who completed the program but never sat for the Board of Certification (BOC) examination. Many of the students who dropped from the program stated that the program requirements were more rigorous than anticipated, and/or they did not fully understand the profession until after program admittance. After adopting the use of the application process described herein, the student attrition rate dropped to less than 1 student per year (out of more than 25 students admitted) and 100% of students sitting for the BOC examination. The pass rate for the BOC examination is also very high, but that was not the goal for adopting the new program admission process. Instead, our goal was to reduce the rate of student attrition and increase the percentage of students who sat for the BOC examination. We have achieved each of these goals annually for the past 10 years, and we anticipate that others may benefit from reading the admissions process we developed to meet these goals.

OVERVIEW OF THE APPLICATION PROCESS

The application we use consists of both qualitative and quantitative components that include: the application form, achievement in prerequisite course work, grade point average (GPA), directed observation with preceptor evaluation, essay, admittance exam, interview, and 2 letters of recommendation. Each area has established point values associated with it, with a maximum score of 100 points (see Table 1). This application process is completed during the fall semester of the sophomore year for native students or during the first fall semester for transfer students. Accepted students are admitted for the spring semester, matriculating in the program for a total of 5 semesters plus a professional practice experience.

Application Form—2 points

The application form is online, a change that was made 3 years ago. Applicants receive 2 points for submitting the completed application form. We have found that students

take more care in completing the application completely and accurately if there are points assigned to this component. An automated university system populates demographic information, including name, current major, contact information, GPA, and when the application was begun and submitted. The applicant is asked about previous athletic training exposures, membership in the university athletic training club, and existing first aid and cardiopulmonary resuscitation certifications. Further, the applicants acknowledge that if they are accepted into the ATP, they are required to meet stated technical standards, complete a criminal background check, obtain or waive specific vaccinations, and submit an approved physical examination. Lastly, they acknowledge understanding that: (1) there are a limited number of spaces available in the ATP, and they must meet certain requirements to be considered for ATP acceptance and to remain in the ATP; (2) application materials will be evaluated by ATP faculty and staff and potentially other faculty members in the school; and (3) they must meet certain program and clinical requirements to be endorsed for the BOC examination.

Prerequisite Course Work—32 points

Requiring prerequisite course work for admittance into an ATP is common. We require 3 specific courses as prerequisites for admittance into the ATP. From an advising standpoint, students typically take these courses during the fall semester of their sophomore year, coinciding with their ATP application. The required prerequisites include a course in anatomy and physiology with lab and 2 introductory athletic training courses, 1 a lecture course and the other a practicum. The anatomy and physiology course with lab covers the gross structure and physiology of the human body. The introductory athletic training lecture course provides an introduction to the field of athletic training, including history, professional developments, certification requirements, responsibilities, skills, facilities, and clinical settings. The introductory athletic training practicum course provides an introduction to the actual experience of athletic training by observing clinical practice. Points associated with the grades earned in these courses are outlined in Table 2, with points earned for an A representing the maximum points possible. Each of these courses must be completed with a C or better; thus, no points are earned for less than a C, and the student would be automatically disqualified from admission for that year. Please keep in mind that the grades in these courses may not represent actual aptitude. Further, even if the course grades are representative of foundational knowledge, this may not translate to future course performance and/or professional success. A cause-and-effect relationship is not suggested here. Instead, the review of a student's grades in prior coursework has been helpful in understanding how that student may apply him or herself in subsequent courses.

Grade Point Average—15 points

The ATP requires a minimum cumulative GPA requirement of 2.70. This minimum standard was established to maintain a competitive admissions process while ensuring graduates of

Table 1. Points Associated with Each Aspect of the Application

Application Component	Points
Application	2
Prerequisite course work	32
Grade point average	15
Directed observation with evaluation	12
Essay	10
Admittance examination	10
Interview	15
Letters of recommendation	4
Total	100

the program are able to meet graduate school admission requirements. In addition to the required minimum GPA, more points are afforded in the admission equation for higher cumulative GPAs. This serves to screen applicants in terms of academic ability or aptitude. Over the course of the last decade, we have observed that, to some degree, prior performance in overall coursework has predicted future academic success. Applicants with higher GPAs coming into the ATP typically continue to perform well academically while in the program, ie, nonvoluntary attrition due to unsatisfactory academic progress is not an issue. Points associated with the applicant's GPA are earned as outlined in Table 3. For transfer students, we review the transfer GPA but do not factor the transfer GPA into the GPA calculation.

Directed Observation with Evaluation—12 points

Applicants complete 30 hours of directed observation. These directed observation experiences involve 3 rotations that are each 3 weeks in length. These observations are in conjunction with the athletic training introductory practicum course. The instructor of this course also serves as the clinical education coordinator and determines the student rotations. Attempts are made to provide every student exposure to the preceptors and activities/events at 1 of our affiliated high schools, 1 of our National Collegiate Athletic Association (NCAA) Division I affiliations, and 1 of our National Collegiate Athletic Association Division III affiliations. The student is responsible for contacting the assigned preceptor well in advance to make the necessary scheduling arrangements to observe at the clinical site. Additionally, while at the respective sites, the observation students are each assigned to a junior or senior athletic training student who serves as a peer mentor.

Table 2. Overview of Points Earned for Grades Achieved in the Anatomy and Physiology and the Athletic Training Introductory Lecture and Practicum Courses

Courses	Points Associated with Course Grades					
	A	B	C	D	F	
Anatomy and physiology	12	8	4	0	0	
Athletic training introductory lecture	10	6	2	0	0	
Athletic training introductory practicum	10	6	2	0	0	

Table 3. Breakdown of Points Earned Based upon Cumulative Grade Point Average (GPA)

Cumulative GPA	Points
3.90–4.00	15
3.80–3.89	14
3.70–3.79	13
3.60–3.69	12
3.50–3.59	11
3.40–3.49	10
3.30–3.39	9
3.20–3.29	8
3.10–3.19	7
3.00–3.09	6
2.90–2.99	5
2.80–2.89	4
2.70–2.79	3
<2.70	0

At the conclusion of each rotation, the assigned preceptor evaluates the student. The preceptors are encouraged to seek feedback from the student's peer mentor in completing this evaluation, but the mentor does not evaluate the applicant directly. The evaluation focuses primarily on the professionalism exhibited by the observation student during the rotation. Specific items include:

- Demonstration of sincere interest in the profession of athletic training,
- Punctuality and dependability,
- Communication skills,
- Professional attire and behavior, and
- Observation hour demeanor.

Each item is graded on a 10-point scale, with 50 points total available per evaluation. The points earned from the 3 separate preceptor evaluations are totaled and divided by 150 to determine a total percentage earned. Table 4 provides the breakdown of points earned based on the clinical observation evaluations percentage.

We feel as though it is important to note that, in prior years, we required 50 hours of observation. Based on student feedback (we asked applicants how we could better prepare them for the ATP), 2 years ago, we decreased the required number of observation hours to 30. This change enabled us to have more in-class time with the students to ensure they

Table 4. Breakdown of Points Earned Based upon the Average of 3 Clinical Observation Evaluations

Score, %	Points
94–100	12
90–93	11
87–89	9
84–86	8
80–83	7
77–79	5
74–78	4
70–73	3
<70	0

Table 5. Questions Asked During the Interview with Each Candidate

Question
What are the biggest sources of motivation in your life?
What personal and professional qualities do you believe are important to succeed as an athletic trainer?
What has motivated you to select athletic training as your major?
What are your immediate plans after becoming certified as an athletic trainer and how do you see the athletic training program helping you to succeed in those plans?
Where do you see yourself working in 7 to 10 years?
As a professional, we sometimes work with people we may not get along with or must work with teams/coaches we do not necessarily like. How would you handle or address a situation like this?
Please describe your perception of the time demands during the five semesters of the clinical instruction program. Specifically, how do you plan to adapt to the required clinical hour component of the athletic training program while maintaining the required academic standards necessary to remain in the program?

understood the profession and their professional responsibilities. We have found the change beneficial. Students are better informed about the requirements of the program and the profession, while still obtaining a very thorough observational exposure to athletic training.

Essay—10 points

Applicants are asked to write a 2-page, double-spaced, 12-point-font essay as part of the application. The instructions specify that the student must explain why they wish to become an athletic trainer and to describe the type of employment setting (clinic, high school, collegiate, or other) they plan to seek following the successful completion of all ATP requirements and passage of the BOC examination. Historically, each essay is blinded and graded by the program director for clarity, punctuation, grammar, and content. Grades are earned as follows: high quality = 10 points, above average = 8 points, average = 6 points, below average = 4 points, and low quality = 2 points. A high-quality essay is one in which the applicant clearly outlines why they want to become an athletic trainer and the employment setting they want to work in with few, if any, punctuation and grammatical errors. An above-average essay lacks clarity on 1 of the 2 topics with few, if any, punctuation and grammatical errors. An average paper lacks clarity on both topics with few, if any, punctuation and grammatical errors. Below-average and low-quality essays have an increasing number of punctuation and grammatical errors with a lack of clarity on both topics. In the coming year, we are modifying this aspect of the application to have 2 evaluators read and score each essay in an attempt to increase the reliability of these evaluations. A mean of the resulting scores will be used for the applicant.

Admittance Examination—10 points

As part of the introductory lecture course, students take an admittance examination. Examination questions are multiple choice and are similar to the questions one would see in the test bank for an introductory athletic training textbook. The examination covers aspects of the items discussed in the course (see course description in prerequisite section), but also includes detailed questions on topics ranging from administration to orthopaedic assessment, items not discussed in the course. We recognize fully that the applicants will not possess all the requisite knowledge to perform at a high level on this examination. However, this initial score serves as a baseline

for future comprehensive examinations given after the junior and senior years, which are used as a gauge of progress on program outcomes. Because of the nature of the admittance examination, we do not have a passing score or a minimum percentage that a student must obtain to be accepted into the ATP. Rather, points for the admittance examination are earned based on a standard deviation so that students are not penalized for a lack of knowledge about athletic training and the athletic training profession. As such, the exam is scored as follows (as compared to the group taking the examination that year):

- 2+ standard deviations (SD) above the mean receive 10 points,
- 0–2 SD above the mean receive 8 points,
- 0–2 SD below the mean receive 6 points, and
- 2+ SD below the mean receive 4 points.

Mean scores are determined for the each individual cohort of applicants.

Interview—15 points

Two ATP faculty members formally interview each applicant. After initial introductions, the applicant is asked to tell us about themselves to become acquainted. Each applicant is then asked the questions outlined in Table 5. In addition to these 7 questions, the applicants are also evaluated by the 2 ATP faculty members on an overall impression, including maturity, demeanor, sincerity, communication, motivation, and professionalism. Each question and the overall impression of the candidate are graded on a 5-point Likert scale, with 1 being weak and 5 being excellent. Half scores (eg, 3.5 or 4.5) are permitted. The applicant score is based on the average of the 2 interviewers' scores, which is then multiplied by 3 for appropriate weighting of the interview.

Letters of Recommendation—4 points

Applicants are asked to secure 2 letters of recommendation to accompany their application. These letters are to be from individuals such as non-ATP faculty, high school faculty, or clinical supervisors who can speak to their strengths and aptitude as a future athletic trainer. Since most, if not all, letters of recommendation are positive, 2 points are earned for each submitted letter (4 points possible).

Admission Decisions

The score each applicant receives on the individual items is summed, and the applicants are rank ordered. The number of students we accept on a yearly basis fluctuates based upon the quality of the applicant pool and the number of available clinical sites. We do not accept students who have less than the minimum GPA (2.70) or who have not received at least a C in the prerequisite courses. Individuals who are not accepted and are still interested in athletic training are encouraged to speak with the program director to discuss a plan to improve their application profile for the following year. Subsequent admission is not guaranteed.

APPLICATION PROCESS COMPARISON

Application processes for admitting athletic training students have not been studied to any extent. This is not the case in nursing. In the following paragraphs, we compare the secondary selective admission process we have outlined above to processes used to admit nursing students. We chose nursing for 2 reasons: (1) athletic training and nursing take similar approaches to professional education and (2) components of the application and the predictive value of these criteria have been studied more extensively in nursing.

Prerequisite Course Work

When reviewing the available literature in nursing education, studies¹⁻⁴ that considered the grades of prerequisite courses resulted in varying results. In 1 study, prerequisite science course grades, including courses in microbiology, chemistry, anatomy, and physiology, were relatively strong predictors for success in subsequent first semester pathophysiology ($r = 0.77$) and pharmacology ($r = 0.60$) courses.¹ Likewise, Higgins² found a statistically significant correlation between grades in prerequisite courses (anatomy and physiology) and completion of a nursing program. In a retrospective study to predict academic success in an undergraduate nursing program, Horton⁴ developed 3 models to predict program completion. One of those models considered grades in prenursing science courses, but based upon logistic regression, this model could not predict program completion. While the combined findings of nursing studies do not definitively support our continued use of prerequisite courses to reduce attrition rates, we have found the course grades in the prerequisite courses closely correlate with performance in first semester didactic athletic training courses. The prerequisite course grades provide evidence regarding aptitude and effort for the program applicants. This evidence, when combined with other data collected prior to admission, assist us in making informed decisions in the admission process and likely contribute to our minimal rate of involuntary attrition.

Grade Point Average

Within nursing literature, a few studies have evaluated the use of prerequisite GPA data when evaluating students for admission into nursing programs of study. Among these nursing studies,⁵⁻⁸ the use of the prerequisite GPA as a predictor for the future GPA is supported when the data are combined with other measures. Newton et al⁵ conducted a study of 2 cohorts of sophomore nursing students in the first year of a nursing program. The preadmission GPA was found to be a strong predictor of the first semester GPA. Similarly,

Yocom and Scherubel⁶ found that preadmission cumulative GPA correlated highly with performance in baccalaureate nursing courses. McNelis et al⁷ developed a new model for admitting nursing students at a Midwestern university after determining that GPA alone was not an adequate determinant when considering retention, academic success, and diversity in the nursing program. However, GPA was retained as a useful admission criterion in the process. Finally, in a project conducted in California⁸ to help alleviate the nursing shortage in that state, a variety of admission factors were evaluated. Among the results, GPA was a statistically significant indicator for nursing program completion. While the relationship was not completely linear, a higher prerequisite GPA generally equated to a higher level of program completion.

Observation with Evaluation

Research is lacking on the use of observation or job shadowing as part of the admission process. When observation is included as part of the evaluation process, researchers commonly include observation hours with nonacademic factors.⁹ Lehna et al¹⁰ demonstrated that job shadowing was a beneficial way to get potential students interested in pursuing a career in nursing. Crosby et al¹¹ studied preadmission experiences for students applying to become nurse practitioners and certified registered nurse anesthetists and reported that clinical experiences were rated as “somewhat important” in admission decisions. We are not placing athletic training observation on the same level as the work experience of nurses, but the insight athletic training students are gaining via observation bears noting.

The use of observation is supported outside of nursing as well. A study from physical therapy showed clinical evaluations from student observation hours increased the ability to predict academic achievement by 2%.¹² Lopez et al⁹ found inclusion of nonacademic factors, such as a shadowing experience, into the admission process helped increase diversity in dental students. Further, others have shown that service participation, not necessarily directly within the applied field, enhanced student academic development¹³ and was the best predictor of academic performance.¹⁴ In summary, the benefit of observation and/or service learning in other allied health care professions adds to the credibility of requiring it as part of the athletic training application.

Essay

The use of an application essay to assist in admission decisions appears to aid these decisions. Several authors in nursing have studied using written essays or personal statements as part of the admission process and to study attrition in the program. Wilson¹⁵ supported the use of essays to evaluate candidates applying to a graduate nursing program. Results suggest scoring the essays blindly by 2 committee members and looking for an obvious break in the scores. These findings were in agreement with Sadler¹⁶ who used 250- to 300-word essays as part of the application to an undergraduate nursing program. Results demonstrated a noticeable difference in the content of essays from students that completed the program and those that dropped out (ie, those with higher-quality, more focused essays completed the program). The author suggests using carefully worded questions to guide students' responses in order to reveal the motivational factors

associated with choosing the career. An earlier study¹⁷ found that the application essay score had the highest correlation with graduate GPA. Essays were scored by 2 committee members and scored based on writing ability, motivation, research knowledge and experience, strengths and weaknesses, and additional experiences. Based on the available evidence, admission essays can be helpful in determining admission and minimizing attrition in a program.

Admittance Examination

Nursing programs that use a specialized prenursing examination as part of the admission criteria provide a meaningful comparison to our admittance examination approach. These specialized prenursing examinations significantly correlated with passing the National Council Licensure Examination for Registered Nurses (NCLEX).¹⁸ Examples of specialized prenursing examinations include: the National League for Nursing prenursing examination, Assessment Technologies Institute Test of Essential Academic Skills, Education Resources, Inc, Nursing Entrance Test, and the Psychological Corporation Registered Nursing Entrance Exam. The data supporting or refuting the predictive reliability of each of these examinations individually is beyond the scope of this paper, but conclusions drawn from these studies are important. Taking a prenursing examination as part of the application process is useful in combination with other admission criteria as a predictor of NCLEX success. More data is needed before a determination can be made whether the preadmission examination we employ is a good predictor of program attrition, BOC examination pass rates, and postgraduation employability. The examination as discussed herein has only been given to students still matriculating in our program. In the coming years, we are anxious to see what predictive value it may have.

Interview

The inclusion of an interview appears to primarily affect attrition rates in nursing programs. In a study published in 2007, Rosenberg et al¹⁹ witnessed lower attrition rates in baccalaureate programs that conducted an interview as opposed to programs that did not (10%–15% versus 20%–30%). They proposed that conducting an interview helps with making decisions about students who look good on paper, but may have characteristics that would hinder their success. The observations of Rosenberg et al¹⁹ agree with Ehrenfeld and Tabak,²⁰ who add that one-on-one interviews were associated with lower attrition rates than group interviews ($n = 5$ students). Further, Trice, and Foster²¹ assert that interviews aid in adding to the diversity of the admitted class without negatively affecting NCLEX pass rates or attrition. Additionally, when an interview was used, reasons for attrition were more commonly related to academic reasons than nonacademic.

Letters of Recommendation

Data regarding the role that letters of recommendation play within the admission process for nursing programs is limited. Crow et al¹⁸ reported that, of their 160 survey respondents, 45 (28.13%) required letters of recommendation. The authors did not discuss the importance of letters of recommendation, or lack thereof, in any greater detail. Although not a nursing

application reference, according to Zeleznik et al,²² letters of recommendation have limited predictive power. Despite their predictive power, we require letters of recommendation because they provide another point of reference concerning the applicant's strengths and aptitude as a future athletic trainer.

PROGRAMMATIC APPLICATION AND CONCLUSIONS

We have found great success using this admittance approach (with minor modifications) over the last decade, the components of which are reinforced by the nursing literature. Although some of the information presented in the nursing literature is conflicting, we feel as though there is sufficient evidence to support the use of a multifaceted approach to admission decisions. Using the last 3 years of accepted students as a representative example, 81 students were accepted into the program. Three of those chose not to enroll in the program, 1 electing a different major at the same university and 2 deciding to leave the university. A fourth was unable to enroll in the ATP due to personal medical limitations resulting from a motor vehicle accident. Of the 77 admitted students, only 1 student has been removed due to involuntary attrition. One additional student left the program to attend a university closer to home. All (19) of the students accepted 3 years ago who have graduated have taken the BOC examination. We believe the application process is a key to this low attrition rate and that all graduating seniors are now sitting for the BOC examination.

It is important to recognize institutional autonomy in the approach we have discussed. The system we employ works well for us but has been, and will continue to be, modified. Programs with direct admission may find it difficult to implement all of the steps we have outlined for the application process. The approach may work well for an entry-level master's program, but modification may be needed with regard to several of the requirements, including GPA, prerequisite courses, observation hours, and the admittance examination. Regardless of the admission steps a program uses, it is clear that the application should include multiple elements when making informed and consistent admission decisions. Doing so will provide a more holistic view of the candidate without relying solely on academic qualifications.

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