

1-1-2004

# The Effect of Student Satisfaction on Freshman Retention in Undergraduate Athletic Training Education Programs

Valerie W. Herzog

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THE EFFECT OF STUDENT SATISFACTION ON FRESHMAN RETENTION IN  
UNDERGRADUATE  
ATHLETIC TRAINING EDUCATION PROGRAMS

By

Valerie W. Herzog

Dissertation submitted to

the Graduate College

of

Marshall University

in partial fulfillment of the requirements

for the degree of

Doctor of Education

in

Educational Leadership

Approved by

Dr. Dennis P. Prisk, Committee Chairperson

Dr. Teresa Eagle

Dr. Steve Banks

Dr. Joseph Beckett

Leadership Studies

2004

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## ABSTRACT

### The Effect of Student Satisfaction on Freshman Retention in Undergraduate Athletic Training Education Programs

Student retention is an issue facing higher education administrators that cannot be ignored. Program directors of athletic training education programs (ATEP) must become aware of the factors which influence retention and develop strategies to reduce attrition. Because the majority of attrition occurs during the freshman year, the focus of retention programs should be on the first year of the students' college experience. To better understand why they persist in undergraduate ATEPs, freshman students ( $n = 603$ ) were surveyed to determine their level of satisfaction with various aspects of the program as well as whether or not they chose to apply to the program during the spring semester. Of the surveys that were mailed, 347 were returned for a 58% return rate. Significant differences were found at the  $p < .01$  level with regard to their satisfaction with their intellectual integration, social integration, commitment, and clinical education experience. Significant differences between groups were also noted at the  $p < .01$  and  $p < .05$  levels for the students' college cumulative grade point average (GPA) and their athletic training and science course grades. This study provides sufficient support for the development of retention programs to enhance student satisfaction with the freshman experience in ATEPs and in turn, increase the retention rates as well. Enriched by an evidence-based and coordinated retention program, the freshman experience can be a stimulating and fulfilling transition into college life as an athletic training student.

## ACKNOWLEDGEMENTS

Many people have been instrumental in assisting me achieve my goal of earning a doctoral degree in Higher Education Administration from Marshall University. We were quite a team and each member played a critical role. My deepest appreciation goes out to:

My husband, Tim, and my daughter, Isabelle, for supporting me and boosting my spirits when I needed it most. They are the foundation for everything I do.

Dr. Dennis P. Prisk, my chair, for keeping me on track and on schedule. I had several lofty goals in my timeline and he helped me to determine what I needed to do to make things happen. He was always incredibly supportive and worked very hard to maintain a harmonious committee.

Dr. Teresa Eagle, my committee member who helped me get the right forms to the right people at the right time. She was also very supportive both academically and personally. Her input on my writing resulted in a much stronger document.

Dr. Steve Banks, a statistical genius, whom without, I would have been lost in Chapter 4. He was so very knowledgeable, helpful, and supportive while I analyzed my data and attempted to determine what it was trying to tell me.

Dr. Joseph Beckett, a colleague and friend who agreed to join my committee when I was in a bit of a pickle. I will always appreciate how quickly Joe was up to speed on my topic as well as the supportive comments he offered.

Dr. Terry Shepherd, my initial minor chair who taught me a critical understanding of exercise physiology. The students of Marshall University will deeply miss such a fine professor.

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## Chapter 1

While many colleges and universities in the past viewed attrition as a “weeding-out process,” however, in the 21st Century, allied health education programs and universities as a whole “recognize attrition as a critical problem to conquer” (Rosenfeld, 1988, p. 202). “Most colleges regard attrition as a serious waste of educational resources and human potential” (Monroe, 1977, p. 207). Retaining the largest practical number of high academic quality students is vital to maintain the prestige, quality, and financial stability of both academic departments and their universities (Gupta, 1991). The US Congress has been recently considering creating a grant program to reward colleges and universities for meeting retention and graduation goals (Swail, 2004).

Student retention in higher education has been studied extensively for the past 50 years. In the year 2003, graduation rates in the United States were extremely low with only 41.2% of students at public four-year institutions earning degrees and only 54.5% graduating at four-year private institutions (ACT, 2003). Tinto (1987, 1997) reported that approximately 56% of students enrolled in 4-year colleges and universities will leave the institution prior to graduating. National data demonstrate that most college or university students drop out during the freshman year (Oklahoma State Regents for Higher Education, 2002).

### Issues Affecting Attrition

#### *Athletic Program Size*

In 2003, the national freshman attrition rates averaged between 29.6% and 47.2%. The highest attrition rates were associated with two-year public institutions while the lowest attrition rates were found at private four-year institutions. In addition, those schools with higher admissions standards experienced much lower freshman attrition (8.7%) than those with open

admissions (45.4%). The more selective a university, the lower their freshman attrition rate. In general, smaller, private institutions with high selectivity have higher freshman retention rates than larger, public institutions with lower selectivity (ACT, 2003).

The size of the athletic program is closely related to the size of the university (NCAA, 2003). Therefore, the size of the athletic program probably also correlates with retention rates. NCAA Division I athletic programs are generally found at larger universities. These schools typically have undergraduate enrollments of 5,000 to 48,000 students. NCAA Division II, NCAA Division III, and NAIA athletic programs are usually housed in smaller schools. Enrollments in these schools range from 1,000 to 4,000 undergraduate students (NAIA, 2001; NCAA, 2003).

#### *Academic Achievement*

One area that is still under debate regarding attrition in higher education is whether or not most students who drop out do so because of poor academic achievement. At many schools, the mean grade point average of students who drop out has been found to be equal to or greater than the grade point average of those who are retained (Noel, Levitz, Saluri, & Associates, 1985). In several studies, the college cumulative grade point average (GPA) and liberal arts GPA were actually found to be the least predictive of a host of variables related to retention (Campbell & Dickson, 1996). Less than 15% of students who leave their higher education institution do so because of an academic dismissal. Most depart voluntarily due to dissatisfaction with their college experience (Tinto, 1987, 1997).

#### *Clinical Education*

Many students withdraw from allied health education programs due to a dislike of the field. Blume and Krefetz (1997) and Thomas (2002) stated that this may occur because of a lack

of hands-on clinical experiences offered early in the program. Clinical education in undergraduate athletic training education programs (ATEP) may be a likely reason that freshmen students grow to dislike the field of athletic training. During the freshmen year, students are generally required to complete clinical observation hours. This time is spent observing in the athletic training environment. It is designed to be a time of learning and enrichment (Turocy, 2002; Weidner & Henning, 2002). Unfortunately, athletic training students spend 59% of this time unengaged. Miller and Berry (2002) explained that students spent the majority of the clinical experience “performing behaviors seemingly unrelated to athletic training that appear to offer no apparent educational or clinical value, such as waiting, bathroom breaks, and social behaviors (e.g., discussing events outside of athletic training, performing tasks unrelated to athletic training)” (p. S-230). In addition, students in athletic training (Davis & Misasi, 2001), nursing (Melia, 1987), and physical therapy (Harris & Naylor, 1992) have all reported that they felt they were providing a labor force rather than receiving focused clinical instruction.

#### *Academic Advising*

Academic Advising and faculty support can also have a significant impact on student retention and overall program satisfaction (Sherrod et al., 1992). The academic advisor is in the ideal position to identify obstacles to persistence as well as strategies for combating them. Dealing with these issues in a timely manner ultimately leads to higher rates of retention (Astin, 1983; Lenning, Bean, & Sauer, 1980; Thomas, 2002; Thurber, Hollingsworth, Brown, & Whitaker, 1989). Students who report more informal, personal contact with faculty are also more likely to persist (Gerdes & Mallinckrodt, 1994).

### Retention Research

There is a large body of retention research in several of the allied health sciences including nursing, respiratory care, physical therapy, and occupational therapy (Blume & Krefetz, 1997; Campbell & Dickson, 1996; Douce & Coates, 1984; Gupta, 1991; Hedl, 1987; Laudicina, 1995, 1997). However, there is currently a void in retention research in the field of athletic training, also an allied health profession. Because of the extensive clinical hour requirement and rigorous coursework associated with allied health education programs, they all face similar issues regarding student retention (Gupta, 1991; Sherrod et al., 1992). Hedl (1987) found that students who dropped out of allied health programs did so after an average of 2.5 semesters. Many of these students (46%) dropped out during or immediately following their first semester. Hedl concluded that what happens to allied health students after they have begun school may be more important in determining voluntary attrition than demographic characteristics. Laudicina (1997) found similar attrition trends in clinical laboratory science programs.

The majority of retention research in the health sciences has focused on nursing programs. Attrition in nursing education programs has been reported to be anywhere from 12% to 44% (Feldbaum & Levitt, 1980; Rosenfeld, 1987; Rowland, 1978). As with many other retention studies, most of the nursing studies examined demographic information used to predict student persistence in college. Student retention research has evaluated multiple variables including high school GPA, SAT and ACT scores, socioeconomic status, age, gender, and quality of high school curriculum (Blume & Krefetz, 1997; Campbell & Dickson, 1996; Douce & Coates, 1984; Gupta, 1991; Hedl, 1987). Since factors such as age, gender, and high school

GPA cannot be influenced by university administrators, this demographic data can only be used to identify high-risk students.

Campbell and Dickson (1996) conducted a meta-analysis of 10 years of retention prediction research in nursing. They concluded that grade point averages in nursing and science Courses were the greatest cognitive predictors of persistence. ACT scores were found to be better predictors of persistence than SAT scores. High school GPA and rank were both significant indicators of retention. The demographic factors that were most influential were the level of parental education and the age of the student. Gender was not found to be a significant predictor of retention.

In most athletic training education programs (ATEPs), students declare their major as athletic training as entering freshman. They spend their first two semesters taking general education Courses, introductory athletic training Courses, and completing observational clinical hours. Generally, during their second semester, these students then apply for admission into the athletic training program (Turocy, 2002). Therefore, one can conclude that the number of students who choose to apply to the athletic training program is an excellent indicator of freshman retention in these programs.

A previous national study of ATEPs showed that only  $50.7 \pm 25.1\%$  of athletic training majors chose to apply to the program. Of the students who were admitted into the ATEP,  $89.0 \pm 11.0\%$  graduated from the program in four years or less (Herzog & Prisk, 2004). This presents strong evidence that the freshman retention rate is a strong predictor of the graduation rate in ATEPs. Therefore, the purpose of this study is to analyze the effect of student satisfaction upon an athletic training student's decision to apply to an athletic training education program at the end of his/her freshman year.

### Retention Theories

Two well-supported theories explain the phenomenon of retention, or persistence in college, Tinto's Student Integration Model and Bean's Student Attrition Model. Tinto's Student Integration Model (1987, 1997) has been validated through research involving a multitude of settings and populations (Antley, 1999; Cabrera, Castaneda, Nora, & Hengstler, 1992; Cabrera, Nora, & Castaneda, 1993; Mallette & Cabrera, 1991; Nora, 1987; Nora, Attinasi, & Matonak, 1990; Pascarella & Terenzini, 1979; Pascarella, Terenzini, & Wolfe, 1986; Stage, 1988). Tinto's model attributes student attrition to students who are poorly matched with higher education institutions. He asserted that the two key characteristics that must be well-aligned are the student's background traits (e.g., race, academic aptitude, family educational context) and the student's motivation and Commitment to complete college. These two factors have a significant influence on how well the student will become integrated into the college's social and academic systems. Voluntary student departures are most often related to dissatisfaction with the level of social and Intellectual Integration with the university (Blume & Krefetz, 1997; Cabrera, Nora, & Castaneda, 1993; Tinto, 1982, 1987, 1997). Tinto also emphasized the importance of *Goal Commitment* which indicates the student's Commitment to an educational goal, such as doing well in a course and/or graduating from an academic program (Cabrera, Nora, & Castaneda, 1993; Tinto, 1982, 1987, 1997).

The second well-supported theory on college persistence was developed by Bean. His Student Attrition Model focuses on the role of organizational variables, personal variables, and environmental variables which shape the beliefs and, in turn, the attitudes of students (Cabrera, Nora, & Castaneda, 1993). Bean's research has indicated that non-intellectual factors and family approval have significant effects on freshman retention. Bean also proposed that student attrition

is similar to employee turnover in businesses and corporations. He stated that persistence can be predicted by assessing the students' behavioral intentions to stay or leave and labeled this construct *Intent to Persist*. Bean's research led him to develop several recommendations for universities wishing to decrease attrition including some less common ideas such as strict absenteeism policies, creating outreach programs for the parents of students, and discouraging marriage prior to graduation (Bean, 1980, 1982a, 1982b, 1983, 1985, 1990).

Cabrera, Nora, and Castaneda's 1993 survey research determined the extent to which the two main retention theories by Bean and Tinto can be merged to explain freshman retention. Their survey was designed to evaluate student satisfaction with the university as a whole. A series of factor analyses demonstrated that Tinto's construct *Academic Integration* converged with Bean's construct *Courses* (Cabrera, Castaneda, Nora, & Hengstler, 1992). For the purpose of this study, this merged construct will be referred to as *Intellectual Integration*.

The construct *Social Integration* indicates the ability to develop friendships with peers (Tinto, 1987). A series of confirmatory factor analyses demonstrated that this is the best indicator of the construct as well as the most valid. This research also demonstrated that Tinto's construct, *Institutional Commitment*, and Bean's construct *institutional fit and quality* can be merged into a single construct. For the purpose of this study, this construct will be referred to as *Program Commitment*. (Cabrera, Nora, & Castaneda, 1993).

While Bean and Tinto's models focus primarily on the university as a whole, many factors which influence attrition are localized to the student's academic program (Astin, 1983; Blume & Krefetz, 1997; Campbell & Dickson, 1996; Gerdes & Mallinckrodt, 1994; Hedl, 1987; Lenning, Bean, & Sauer, 1980; Sherrod, et al, 1992; Thomas, 2002; Thurber, Hollingsworth, Brown, & Whitaker, 1989). One such factor is the leadership style of the program director.

### Transformational Leadership

The leadership of an academic program affects almost every aspect of that program. Leaders play a critical role in curriculum development, clinical education, faculty morale, and program administration (Perkins & Judd, 2001; Perrin & Lephart, 1988). Research has demonstrated repeatedly that transformational leaders are very effective organizationally and create positive environments (Hater & Bass, 1988; Howell & Avolio, 1993; Kirby, Paradise, & King, 1992; Murray & Feitler, 1989; Waldman, Bass, & Einstein, 1987).

Transformational leadership is a process that changes and transforms individuals. It is concerned with values, ethics, standards, and long-term goals. Transformational leadership involves assessing followers' motives, satisfying their needs, and treating them as full human beings (Bass, 1985; Bass & Avolio, 1990; Burns, 1978; House, 1976).

There are several common threads throughout all of the versions of transformational leadership. Most researchers agree, for example, that transformational leaders should be strong role models and possess high moral values. They should be confident, competent, articulate, and have a strong sense of self-identity. These leaders are excellent listeners who take the time to learn about their followers' needs as well as their ideas related to the organization. They create a spirit of cooperation through a strong foundation of trust, loyalty, and shared beliefs.

Transformational leaders have a strong vision and incorporate their followers in developing this vision. This vision includes the values and norms of the organization. They are "change agents" who initiate and implement new directions (Bass, 1985; Bass & Avolio, 1990; Burns, 1978; House, 1976; Leithwood, 1992).

In the secondary school setting, researchers have found that transformational leadership practices can have a trickle-down, positive effect on students. Leithwood and Jantzi (2000)

found that transformational leadership improved both organizational conditions as well as student engagement. Verona and Young (2001) found that students scored higher on the New Jersey High School Proficiency Test if their principals practiced transformational leadership.

Transformational leaders create positive work environments which inspire followers to exceed expectations and maintain high moral standards (Bass, 1985; Bass & Avolio, 1990; Burns, 1978; House, 1976; Leithwood, 1992). The focus is placed on the good of the organization, rather than the good of one, although each person feels cared for. Most people thrive in such a positive environment.

Based on the aforementioned literature, one would expect that motivated athletic training faculty members, working with a transformational leader as program director, will work diligently to create positive learning environments, both in the classroom and clinical setting. When issues arise for students that threaten their retention, they will find faculty members who they can trust and who will listen to their concerns and issues (Bass, 1985; Bass & Avolio, 1990; Burns, 1978; House, 1976; Leithwood, 1992). These highly motivated, caring faculty members will exceed expectations by identifying resources that can aid the athletic training student as well as following up regularly with the student to assess their progress. Students will have a clear sense that the ATEP in which they have enrolled is constantly striving to achieve excellence and will be proud to be a part of it. Although this study will not directly measure the leadership style of the program director, it will be assumed that programs with positive, nurturing environments are being led by transformational leaders.

### Summary

Student retention is a pressing issue that can have a significant impact on the strength of colleges and universities (Gupta, 1991; Rosenfeld, 1988). There are a multitude of factors which can contribute to a student's decision to persist including things both within and outside of the school (Campbell and Dickson, 1996; Hedl, 1987; Tinto, 1987, 1997). Many of these factors can be directly linked to the specific program in which they have chosen to major (Astin, 1983; Blume & Krefetz, 1997; Campbell & Dickson, 1996; Gerdes & Mallinckrodt, 1994; Hedl, 1987; Lenning, Bean, & Sauer, 1980; Sherrod et al., 1992; Thomas, 2002; Thurber, Hollingsworth, Brown, & Whitaker, 1989). Research supports the use of student satisfaction questionnaires to identify areas that affect retention (Cabrera, Castaneda, Nora, & Hengstler, 1992; Mallette & Cabrera, 1991; Nora, 1987; Nora, Attinasi, & Matonak, 1990; Pascarella & Terenzini, 1979; Pascarella, Terenzini, & Wolfe, 1986; Stage, 1988). The results can then be used to develop retention strategies which target specific areas of weakness (Saucier, 1995; Starks, 1997)

### Research Questions

The purpose of this study is to analyze the effect of student satisfaction upon an athletic training student's decision to apply to an athletic training education program (ATEP) at the end of his/her freshman year.

The following research questions will be addressed:

1. With which constructs (Intellectual Integration, Social Integration, Academic Advising, Program Commitment, Goal Commitment, Intent to Persist and Clinical Education in ATEPs) are students most satisfied and unsatisfied?

2. What is the relationship, if any, between the satisfaction with each of the constructs and an athletic training student's decision to apply to an athletic training program at the end of his/her freshman year?
3. What is the relationship, if any, between each of the following demographic variables (age, gender, race, size of the athletic program, high school GPA, college GPA, SAT scores, ACT scores, and average grades in athletic training and science Courses) and an athletic training student's decision to apply to an athletic training program at the end of his/her freshman year?
4. What is the relationship, if any, between the size of the school's athletic program (NCAA Div. I, II, III, or NAIA) and the decision to apply to the ATEP by freshmen?

#### Definitions

For the purpose of this study, the following operational definitions and other definitions will be used:

1. Program Director – the administrator responsible for the undergraduate ATEP including the administration of day-to-day operation of all aspects of the ATEP and the coordination of the undergraduate ATEP curriculum.
2. Retention/Attrition – operationalized by a freshman ATEP student choosing to apply to the program during the spring semester (choosing 'yes' to this statement on the survey = retention; choosing 'no' to this statement on the survey = attrition)
3. ATEP faculty – those individuals who teach academic Courses in the ATEP, supervise students as approved clinical instructors (ACIs), or perform both functions.
4. ATEP – an undergraduate Athletic Training Education Program which is accredited by CAAHEP. The programs included in the population for this study will allow

- students to initially apply for admission into the program during the spring semester (or winter semester depending upon their academic calendar) of their freshman year
5. Approved Clinical Instructor (ACI) – “An Approved Clinical Instructor (ACI) is a National Athletic Trainers’ Association Board of Certification (NATABOC) Certified Athletic Trainer with a minimum of one year of work experience as an athletic trainer, and who has completed clinical instructor training. NATABOC certified athletic trainers who wish to be an ACI (e.g., graduate assistant), but who have less than one year of clinical experience, must be supervised by a more experienced ACI. An ACI provides formal instruction and evaluation of clinical proficiencies in classroom, laboratory, and/or in clinical education experiences through direct supervision of athletic training students.” (Commission on Accreditation of Allied Health Education Programs, 2001).
  6. Clinical instructor – “A clinical instructor (CI) is an NATABOC certified athletic trainer or other qualified health care professional with a minimum of one year of work experience in their respective academic or clinical area. Clinical instructors teach, evaluate, and supervise athletic training students in the field experiences. A clinical instructor is not charged with the final formal evaluation of athletic training students' integration of clinical proficiencies. A clinical instructor may also be an ACI.” (Commission on Accreditation of Allied Health Education Programs, 2001).
  7. Athletic training student – “An Athletic Training Student (ATS) who is enrolled in a Commission on Accreditation of Allied Health Education Programs (CAAHEP) accredited entry-level athletic training education program. Synonym: Student” (National Athletic Trainers’ Association Education Council, n.d.)

8. Clinical education – “Clinical education represents the athletic training students' formal acquisition, practice, and ACI evaluation of the Entry-Level Athletic Training Clinical Proficiencies through classroom, laboratory, and clinical education experiences under the direct supervision of an ACI or a clinical instructor.”  
Synonyms: Supervised clinical practice, clinical education experience (National Athletic Trainers' Association Education Council, n.d., Definitions).
9. Standards and Guidelines – “The Standards are the minimum standards of quality used to accredit programs that prepare individuals to enter Athletic Training. The Standards constitute the minimum requirements to which an accredited program is held accountable. The Guidelines provide examples to assist in interpreting the Standards.” (Commission on Accreditation of Allied Health Education Programs, 2001).
10. Student Satisfaction – operationalized by the number chosen on the Likert scale for each of the following constructs evaluated by the questionnaire: Intellectual Integration, Social Integration, Academic Advising, Program Commitment, and clinical education.
11. Athletic Program Size – operationalized by whether the student chose NCAA Div. I on the survey or one of the smaller athletic programs (NCAA Div. II, Div. III, or NAIA)
12. GPA, SAT scores, ACT scores, and age – operationalized by the student's response to these items on the survey
13. Gender – synonymous with sex; operationalized by the student's response to this question on the survey (#33 – Sex: \_\_\_ Male \_\_\_ Female)

14. Average grades in athletic training and science Courses – operationalized by the student's response to this question on the survey (#30 – which asks students what their average grades are in their athletic training and science Courses: A, B, C, D, or F)

### Methods

This research project was conducted as survey research. There was no manipulation of an independent variable or random assignment to groups (Johnson & Christensen, 2000). A program satisfaction survey (see Appendix A) was developed by first examining a number of program evaluations from various ATEPs and looking for themes among them. The recurring themes were then used to develop survey items. The survey was analyzed by a panel of athletic training experts for content validity. A pilot study was also conducted with a group of higher education experts and then analyzed for reliability. After any necessary revisions were made, the survey was mailed to approximately 50% of program directors of undergraduate ATEPs nationally whose students typically apply to the program during the spring of their freshman year. The total number of accredited programs as of December 1, 2003 was 243. It was not known at the inception of the study how many programs allowed students to apply to the ATEP during the spring of their freshman year, although it was estimated to be approximately 60% or 146. Randomly selecting 50% of these would have yielded a sample of 73 programs. This estimation was based on an informal poll completed by those who subscribe to the Athletic Training Education list serve through Yahoo Groups. This group was randomly selected using a table of random numbers. This study utilized one-stage cluster sampling by surveying all of the freshman students in the ATEPs that are chosen for the study (Johnson & Christensen, 2000).

This study was cross-sectional in design, as data was collected at a single point in time from two groups, freshmen who chose to apply to the program and freshmen who decided not to apply to the program (Johnson & Christensen, 2000). After the program application deadline, (generally around April 1st), the program directors distributed the surveys to the remaining freshman in class, either directly or through another faculty member.

The data was analyzed using SPSS 11.0 for Windows. Correlational and descriptive statistics were used to analyze the data.

#### Limitations

1. The survey instrument itself may prove to be a limitation. Although it will be tested for readability and content validity and will be pilot tested, it will be a newly developed survey.
2. Student participation is another limitation. Since it is optional for students to participate in this study, there may be a disproportionate number of responses from students who applied or did not apply.
3. Due to the timing of the survey distribution, students who left the program prior to the distribution of the survey will not be included in the study. This could decrease the generalizability of the findings.
4. The study employs a self-reported questionnaire survey and is limited by the accuracy of the participants' responses (Kerlinger & Lee, 2000).

5. The study will depend heavily on the support and assistance of the program directors and the faculty who teach freshman in the ATEP, therefore, the sample size may be smaller than ideal.
6. Because this research only includes ATEPs which admit students during the spring of their freshman year, the sample may not be truly representative of all undergraduate ATEPs. This could decrease the generalizability of the findings.
7. As of January 1, 2004, all undergraduate ATEPs must have become accredited, or students within that program cannot sit for the National Athletic Trainers' Association Board of Certification Exam upon graduation. Because of this, there are a large number of programs currently pursuing accreditation. Again, this may result in this sample not being representative of the population that exists by the end of 2004. This could decrease the generalizability of the findings.
8. Students may have difficulty accurately remembering their high school GPA as well as their SAT and ACT scores.

### Significance

This study will potentially add to the body of knowledge about retention in undergraduate athletic training education programs. Retaining the largest practical number of high academic quality students is vital to maintain the prestige, quality, and financial stability of both athletic training academic departments and their universities. According to Haller and Kleine (2001), lowering the dropout rate is an issue that administrators face every day. Athletic training education program directors and faculty can utilize the data from this study to develop retention

strategies for their ATEPs. These strategies, separately or in tandem with one another, can then be evaluated for their effectiveness. As the program application rates begin to increase, admissions standards can be increased.

This research is expected to demonstrate that freshmen attrition in ATEPs affects students of a variety of academic strengths. In other words, many of the students who choose not to apply to the program did meet the minimum requirements for application, and often exceeded them. By developing strategies to retain these students, athletic training education program directors may be able to increase the overall academic quality of its students and graduates. Through increased admissions standards and enhanced retention, this study has the potential to improve the quality of athletic trainers practicing in the field by attracting and retaining stronger students.

Research in education administration should focus on issues that pertain to the practice of administration, not administrators (Haller & Kleine, 2000). Gulick and Urwick (1937) identified seven common administration activities: planning, organizing, staffing, developing, coordinating, reporting, and budgeting for the purpose of accomplishing the mission or goals of the organization. Understanding the factors that affect retention will assist program directors in ATEPs in realizing the goal of increased retention as they perform these seven administrative tasks (Gupta, 1991; Monroe, 1977; Rosenfeld, 1988). In a university, the primary purpose is to facilitate student learning (Tinto, 1997). Students who choose to leave the university prior to graduation have certainly not met the learning outcomes intended for them.

ATEP directors can use this information to assist faculty members in the creation of professional development plans which target areas that are affecting freshman retention. ATEP faculty and clinical instructors can use the results of this study to find creative ways to improve their ATEP such as peer mentoring, study groups, structured clinical experiences, and orientation

programs (Courage & Godbey, 1992). College and university deans, provosts, and presidents can use the information gathered to allocate funds for retention programs where they are most indicated.

Athletic training education program directors must first understand why students choose to leave and remain in their programs before they can develop effective retention strategies. This study will provide that knowledge regarding freshmen. The development and implementation of effective retention programs will result in increased enrollments and/or more competitive admissions for athletic training education programs. Both of these outcomes are highly desirable and can ensure the long-term success of the ATEP.

## Chapter 2

### Introduction

Student retention is an issue that cannot be ignored by higher education administrators (Monroe, 1977; Rosenfeld, 1988). It can impact every aspect of the institution including overall enrollment, external funding, and prestige (Gupta, 1991; Swail, 2004). Most students who leave their college or university do so during their freshman year (Tinto, 1987; ACT, 2003). The size of the institution can have a dramatic impact on student retention. In general, smaller, private institutions with high selectivity have higher retention rates than larger, public schools with lower selectivity (ACT, 2003).

### Athletic Program Size

National Collegiate Athletic Association (NCAA) Division I athletic programs are generally found at the larger universities. Division I member institutions must sponsor at least fourteen sports teams. Schools that have football have to meet minimum attendance requirements at home games. A Division I school can have as much as \$21,900,000 in revenues from their sports, with expenses totaling around \$20,000,000. These schools typically have undergraduate enrollments of 5,000 to 48,000 students (NCAA, 2003).

Division II institutions are typically smaller and only need to sponsor eight sports teams. Many Division II student-athletes pay for school through a combination of scholarship money, grants, student loans and employment earnings. Division II athletics programs are financed in the institution's budget like other academic departments on campus. These are smaller schools with smaller athletic budgets. Division II schools see revenues between \$1 million and \$1.4 million per year, while their expenses are generally higher totaling \$1.4 million to \$1.9 million.

Enrollments in these schools are often smaller as well, ranging from 1,000 to 4,000 undergraduate students (NCAA, 2003).

Division III institutions are similar in size to Division II institutions, but must sponsor at least 10 sports teams. Division III athletics features student-athletes who receive no financial aid related to their athletic ability and athletic departments are staffed and funded like any other department in the university. These athletics departments place special importance on the impact of athletics on the participants rather than on the spectators. The student-athlete's experience is of paramount concern. These schools usually generate no revenues and their athletic expenses range from \$350,000 to \$700,000. The average enrollment for Division III schools is 2,146 (NCAA, 2003).

National Association of Intercollegiate Athletics (NAIA) schools are very similar characteristically to NCAA Division II and III schools. Their athletic department budgets are approximately \$1.4 million and they almost always run a deficit when revenues are considered. The average undergraduate enrollment at NAIA schools is 1,500 and 80% of these schools are private (J. Struckle, NAIA Director of Member Services, personal communications, January 22, 2004).

#### Allied Health Education Programs

There is a large body of retention research in several of the allied health sciences including nursing, respiratory care, physical therapy, and occupational therapy (Blume & Krefetz, 1997; Campbell & Dickson, 1996; Douce & Coates, 1984; Gupta, 1991; Hedl, 1987; Laudicina, 1995, 1997). However, there is currently a void in retention research in the field of athletic training, also an allied health profession. Because of the extensive clinical hour requirement and rigorous coursework associated with allied health education programs, they all

face similar issues to one another regarding student retention (Douce & Coates, 1984; Gupta, 1991; Sherrod, et al., 1992). Therefore, retention research in the allied health science education fields probably gives the closest prediction to what research will show in athletic training. Retention research from several fields within undergraduate allied health education programs will be reviewed. However, this review will also discuss general retention research across all academic disciplines.

### Freshmen Retention

The allied health science education programs experience high rates of freshmen attrition, sometimes even higher than overall national averages for all academic programs (Hedl, 1987; Laudicina, 1997). Hedl (1987) studied the university records of alumni and dropouts from an undergraduate program in allied health education over a 14 year period. The study found that students who dropped out of the allied health program did so after an average of 2.5 semesters. Many of these students (46%) dropped out during or immediately following their first semester. Almost all of the dropouts (85%) left the institution during their first four semesters.

Laudicina (1997) found similar results in a study of clinical laboratory science and clinical laboratory technician educational programs. The author surveyed 208 program directors to elicit data regarding program attrition as well as the reasons why students left the programs. Most dropouts in both programs tended to leave during the first half of the program as opposed to the second half of the program, regardless of whether it was a two year or four year program. Both types of programs also reported that students were more likely to drop out during the didactic portion of the program rather than the clinical component.

## Issues Affecting Attrition

### *Poor Academic Achievement*

One area under debate regarding attrition in higher education is whether or not most students who drop out do so because of poor academic achievement. At many schools, the mean grade point average of students who drop out has been found to be equal to or greater than the grade point average of those who are retained (Noel, Levitz, Saluri, & Associates, 1985). In a meta-analysis of nursing retention research, Campbell and Dickson (1996) found that the college cumulative grade point average (GPA) and liberal arts GPA were actually the least predictive of a large host of variables related to retention, although there was still a significant correlation between all GPAs and graduation rates. However, the students' GPAs in nursing Courses, nursing clinical Courses, and chemistry Courses were all strong predictors of persistence. In a 14 year study (1972-1986) of dropouts and alumni of an undergraduate allied health education program, the average GPA for alumni (3.42) was significantly higher than for dropouts (2.91). However, only one student out of 57 dropouts was dismissed for poor academic performance (Hedl, 1987).

According to Tinto (1987), less than 15% of students who leave their higher education institution do so because of an academic dismissal. Most depart voluntarily due to dissatisfaction with their college experience. More recent research by Tinto (1997) indicated that the college classroom experience, or Intellectual Integration, is a stronger predictor of persistence than academic performance. Consistent with Tinto's statistics, Hedl's (1987) study of allied health education students indicated that 14% left for academic reasons. The remainder dropped out due to personal or family reasons (25%), transferring to another program (12%), health problems (5%), moving from the area (5%), work-related issues (11%), or expectations that were

mismatched with the program (2%). It should be noted that the authors did not consider this data to be highly reliable because thorough exit interviews had not always been conducted. Much of these data came from interviews with past academic advisors and 26% of the dropouts were not accounted for regarding their reasons for leaving the program.

Several studies, however, have found that academic difficulties are responsible for a great deal of attrition. Laudicina (1997) found that in clinical laboratory science and clinical laboratory technician educational programs, approximately 50% of the attrition could be attributed to non-voluntary withdrawal or dismissal for academic reasons. In Blume and Krefetz's 1997 study of a clinical laboratory technician education program, the authors found that 57% of the students who withdrew cited academic difficulties. However, nine students who also failed Courses chose to remediate and graduate a year later.

McGrath and Braunstein (1997) reviewed the academic records of 353 freshmen across all academic programs at Iona College in New York. The researchers found that the first semester grade point average was the best predictor of student persistence from the freshman to the sophomore year. The authors also evaluated the effect of high school grade point averages and SAT scores, but neither was shown to be a significant predictor of attrition.

#### *Academic Advising and Faculty Support*

Academic Advising and faculty support can also have a significant impact on student retention and overall program satisfaction. Sherrod et al. (1992) conducted a qualitative study of freshman nursing student satisfaction. Interviews were utilized to ascertain the students' positive academic and nonacademic experiences. Students were also asked about any problems they encountered as well as any recommendations they had for resolving these problems for future students. Faculty support was consistently cited as a positive aspect of the university experience.

The academic advisor is in the ideal position to identify obstacles to persistence as well as strategies for combating them. Dealing with these issues in a timely manner ultimately leads to higher rates of retention (Astin, 1983; Lenning, Bean, & Sauer, 1980; Thomas, 2002; Thurber, Hollingsworth, Brown, & Whitaker, 1989). Gerdes and Mallinckrodt (1994) conducted a six-year study of students across all majors at a large northwestern public university. Freshmen students completed the Student Adaptation to College Questionnaire (SACQ) as a self-reported measure of adjustment to college. At the end of six years, the researchers examined each student's transcript to determine his or her enrollment, graduation, and academic status. Of the students who were categorized as in good academic standing, those who reported more informal, personal contact with faculty were also more likely to persist.

### *Demographics*

Hedl's 1987 study of an undergraduate program in allied health education found that the dropouts and alumni were very similar demographically including age, gender, marital status, ethnicity, and prior academic achievement. The author concluded that the experiences of allied health students after they have begun school may be more important in determining voluntary attrition than demographic characteristics.

A study of 353 freshmen across all academic programs at Iona College demonstrated similar results. The students completed the College Student Inventory (CSI) which assesses predispositions, pre-college experiences, and attributes which can affect retention. None of the following demographic characteristics were significant predictors of attrition: age, gender, race and ethnicity, marital status, fathers' and mothers' educational backgrounds, students' families' native languages, distances from students' homes to the college, socioeconomic background, and participation in the residential life program (McGrath & Braunstein, 1997).

The majority of retention research in the allied health sciences has focused on nursing programs. Attrition in nursing education programs has been reported to be anywhere from 12-44% (Campbell & Dickson, 1996; Feldbaum & Levitt, 1980; Rosenfeld, 1987; Rowland, 1978). As with many other retention studies, most of the nursing studies examined demographic information used to predict student persistence in college. Student retention research in nursing has evaluated multiple variables including high school GPA, SAT and ACT scores, socioeconomic status, age, gender, and quality of high school curriculum (Blume & Krefetz, 1997; Campbell & Dickson, 1996; Douce & Coates, 1984; Gupta, 1991; Hedl, 1987). While some of these items have proven effective in identifying certain students who are at risk of not graduating, this method of looking solely at demographic data is not without flaws. Since demographics cannot be altered by university administrators, the information is only useful in identifying high-risk students.

Campbell and Dickson (1996) conducted a meta-analysis of 10 years of retention prediction research in nursing which included 47 publications. Each study was categorized as having researched cognitive predictors, demographic predictors, self-enhancement predictors, and/or intervention programs. Cognitive predictors included GPAs, grades in individual Courses, standardized test scores, high school rank, and individual test scores from Courses. The self-enhancement predictors of persistence were identified as cognitive/learning style, self-concept/esteem, test anxiety, social support, and situational variables. Demographic characteristics included age, race, finance, gender, and educational level of parents. Finally, the intervention programs were each somewhat unique. These programs ranged from support groups to specialized forms of instruction. The authors concluded that grade point averages in nursing and science Courses were the greatest cognitive predictors of persistence. ACT scores were

found to be better predictors of persistence than SAT scores. High school GPA and rank were both significant indicators of retention. The demographic factors that were most influential were the level of parental education and the age of the student. Gender was not found to be a significant predictor of retention.

The self-enhancement predictors were demonstrated to be weak predictors of persistence. Support groups appeared to have a positive effect on student success, although only one study in the meta-analysis utilized such a program. Because of the consistent ability of science course grades to predict persistence, the authors also concluded that intervention programs should be instituted during the early college years. It is during the freshmen and sophomore years that nursing students typically complete liberal arts and basic science Courses before seeking admission to the nursing program (Campbell & Dickson, 1996).

#### *Dissatisfaction/Boredom*

In Blume and Krefetz's 1997 study of a clinical laboratory technician education program, the authors found that many students (26%) withdrew due to a dislike of the field. This may be due to a lack of hands-on clinical experiences offered early in the program. The academic experience has also been shown to have an impact on retention. This includes the curriculum, teaching and learning issues, flexibility in assignment deadlines, and both modes of assessment and opportunities for remediation (Thomas, 2002).

Clinical education in undergraduate athletic training education programs (ATEPs) may be a likely reason that freshmen students grow to dislike the field of athletic training. During the freshmen year, students are generally required to complete clinical observation hours. This time is spent observing in the athletic training environment. It is designed to be a time of learning and enrichment (Turocy, 2002; Weidner & Henning, 2002). Unfortunately, students often spend a

great deal of this time filling and carrying water bottles and coolers. They also typically spend a significant amount of time doing little else but watching teams practice and compete. Miller and Berry (2002) observed sophomore, junior, and senior level athletic training students during their clinical education experiences. They found that the students were unengaged for 59% of the time, indicating that they spent the majority of the clinical experience “performing behaviors seemingly unrelated to athletic training that appear to offer no apparent educational or clinical value, such as waiting, bathroom breaks, and social behaviors (e.g., discussing events outside of athletic training, performing tasks unrelated to athletic training)” (p. S-230). The researchers also found that sophomore level students spent significantly less time engaged in active learning than upper level students. One can surmise that freshmen students would probably spend even less time involved in active learning.

Students in athletic training (Davis & Misasi, 2001), nursing (Melia, 1987), and physical therapy (Harris & Naylor, 1992) have all reported that they felt they were providing a labor force rather than receiving focused clinical instruction. Students have learned to focus on external appearances such as “looking busy” (Jarvis, 1983). Today’s athletic training students are supposed to receive close supervision and structured clinical education experiences. This has been a significant step in improving the athletic training clinical education experience, but many schools still view athletic training students as a substitute for certified athletic trainers (Weidner & Henning, 2002).

### Retention Programs

Understanding retention and attrition can make a significant difference in institutions' overall enrollments. As administrators gain a better understanding about what motivates students to drop out or persist, they can develop more effective strategies to retain them (Saucier, 1995). Starks (1997) studied the effects of a holistic retention program instituted at Coppin State College for nursing students. The program included an academic success course which focused on problem solving and critical thinking skills. It also encouraged stronger relationships between students and faculty. The retention program also enhanced their mentoring/advising and tutoring programs. The attrition rate in the program dropped from 60% to 20% in about five years. An interesting bonus was that they also experienced an 86% increase in enrollment from 1991 to 1993 that was attributed to the reputation that the program had developed for the care and attention provided to its students.

Pascarella, Terenzini, and Wofle (1986) conducted a study to determine the influence of an extensive precollege orientation program on freshmen retention. The university orientation program lasted 2 days and was optional, but encouraged for all freshmen students. The goals of the orientation program included successful transitioning, increasing awareness of institutional services and resources for students, and identification with the institution. The researchers surveyed the freshmen prior to, during, and after their freshmen year at the university to evaluate their initial Commitments to the institution as well as to the goal of graduation from college. Students were also asked whether or not they attended the orientation program to determine its effect. The data showed that attendance at the orientation program resulted in a significant positive effect on both Social Integration and Institutional Commitment as well as on freshmen

retention. The authors concluded that attendance at freshmen orientation programs can increase freshmen retention (Pascarella, Terenzini, & Wolfle, 1986).

A study conducted with freshmen at the University of Birmingham in England evaluated the effectiveness of counseling intervention with students who were considered to be at risk of not matriculating. A questionnaire regarding student satisfaction and Intent to Persist was completed by 1,180 freshmen students. Sixteen high-risk students indicated on their survey that they would be interested in meeting with a counselor. Fifteen of these students attended counseling and successfully completed their first year. None of these students had sought or been referred for counseling prior to this time (Rickinson & Rutherford, 1995).

Most retention programs require funding to support them. Swail (2004) evaluated several institutions with high retention rates which serve a large proportion of low-income students who are considered high-risk for attrition. While the researcher found that these schools were committed to student retention and filled with dedicated administrators and faculty members, these factors were not the strongest predictors of retention. Financial support for retention programs was, by far, the clear indicator of an institution's ability to engage and retain students.

#### Athletic Training Education Programs

As in undergraduate nursing programs, most ATEP students declare their major as athletic training as entering freshman. They spend their first two semesters taking general education Courses, basic science Courses, introductory athletic training Courses, and completing observational clinical hours. Generally, during their second semester, these students then apply for admission into the athletic training program (Turocy, 2002). Therefore, one can conclude that the number of students who choose to apply to the athletic training program is an excellent indicator of freshman retention in these programs.

A previous national study of ATEPs showed that only  $50.7 \pm 25.1\%$  of athletic training majors chose to apply to the program. Of the students who were admitted into the ATEP,  $89.0 \pm 11.0\%$  graduated from the program in four years or less (Herzog & Prisk, 2004). This presents strong evidence that the freshman retention rate is a much more pressing issue than the graduation rate in ATEPs.

### Retention Theories

Two well-supported theories explain the phenomenon of retention, or persistence in college, Tinto's Student Integration Model and Bean's Student Attrition Model. Tinto's Student Integration Model (1987, 1997) has been validated through research involving a multitude of settings and populations (Antley, 1999; Cabrera, Castaneda, Nora, & Hengstler, 1992; Mallette & Cabrera, 1991; Nora, 1987; Nora, Attinasi, & Matonak, 1990; Pascarella & Terenzini, 1979; Pascarella, Terenzini, & Wolfe, 1986; Stage, 1988). Tinto's model attributes student attrition to students who are poorly matched with higher education institutions. He asserts that the two key characteristics that must be well-aligned are the student's background traits (e.g., race, academic aptitude, family educational context) and the student's motivation and Commitment to complete college. These two factors have a significant influence on how well the student will become integrated into the college's social and academic systems. Voluntary student departures are most often related to dissatisfaction with the level of social and Intellectual Integration with the university. Tinto also emphasized the importance of *Goal Commitment* which indicates the student's Commitment to an educational goal, such as doing well in a course and/or graduating from an academic program (Cabrera, Nora, & Castaneda, 1993; Tinto, 1982, 1987, 1997). Some researchers feel that Tinto's theory is lacking an explanation of the influence of external factors

in shaping perceptions, Commitments, and preferences (Cabrera, Nora, & Castaneda, 1993; Pascarella, Terenzini, Wolfle, 1986; Tinto, 1982, 1987, 1997).

The second well-supported theory on college persistence was developed by Bean. His Student Attrition Model focuses on the role of organizational variables, personal variables, and environmental variables which shape the beliefs and, in turn, the attitudes of students (Cabrera, Nora, & Castaneda, 1993). Bean's research has indicated that non-intellectual factors and family approval have significant effects on freshman retention. Bean also proposed that student attrition is similar to employee turnover in businesses and corporations. He stated that persistence can be predicted by assessing the students' behavioral intentions to stay or leave and labeled this construct *Intent to Persist*. Bean's research led him to develop several recommendations for universities wishing to decrease attrition including some more unique ideas such as strict absenteeism policies, creating outreach programs for the parents of students, and discouraging marriage prior to graduation (Bean, 1980, 1982a, 1982b, 1983, 1985, 1990).

Research has provided strong evidence that there is significant overlap between Tinto's Student Integration Theory and Bean's Student Attrition Model (Cabrera, Castaneda, Nora, & Hengstler, 1992). Building upon these findings, Cabrera, Nora, and Castaneda (1993) examined the extent to which Tinto's model and Bean's model could be merged to explain students' persistence decisions. The researchers employed a two-step structural equation modeling strategy to estimate the parameters. They then developed a baseline model and later in the study, two alternative models, which all incorporated both theories. Each of these models was tested via a survey questionnaire sent to college freshmen. Their results supported the integrated constructs within the alternative models. The final constructs identified were finance attitudes, encouragement from friends and family, Academic Integration, academic performance (GPA),

*Social Integration, Institutional Commitment, Goal Commitment, Intent to Persist, and persistence. Where these factors could be slightly altered to reflect ATEP program satisfaction as opposed to university satisfaction, they were included in the Athletic Training Student Persistence Survey.*

Cabrera, Nora, and Castaneda's 1993 survey research was designed to evaluate student satisfaction with the university as a whole. A series of factor analyses demonstrated that Tinto's construct Academic Integration converged with Bean's construct *Courses* (Cabrera, Castaneda, Nora, & Hengstler, 1992). For the purpose of this study, this merged construct will be referred to as *Intellectual Integration*.

The construct Social Integration indicates the ability to develop friendships with peers. A series of confirmatory factor analyses demonstrated that this is the best indicator of the construct as well as the most valid. This research also demonstrated that Tinto's construct, Institutional Commitment, and Bean's construct *Institutional Fit and Quality* can be merged into a single construct. For the purpose of this study, this construct will be referred to as *Program Commitment*. (Cabrera, Nora, & Castaneda, 1993).

While Bean and Tinto's models focus primarily on the university as a whole, many factors which influence attrition are localized to the student's academic program (Astin, 1983; Blume & Krefetz, 1997; Campbell & Dickson, 1996; Gerdes & Mallinckrodt, 1994; Hedl, 1987; Lenning, Bean, & Sauer, 1980; Sherrod., et al, 1992; Thomas, 2002; Thurber, Hollingsworth, Brown, & Whitaker, 1989). One such factor is the leadership style of the program director.

### Transformational Leadership

The leadership of an academic program affects almost every aspect of that program. Leaders play a critical role in curriculum development, clinical education, faculty morale, and program administration. Research has demonstrated repeatedly that transformational leaders are very effective organizationally and create positive environments (Hater & Bass, 1988; Howell & Avolio, 1993; Kirby, Paradise, & King, 1992; Murray & Feitler, 1989; Waldman, Bass, & Einstein, 1987).

Transformational leadership is a process that changes and transforms individuals. It is concerned with values, ethics, standards, and long-term goals. Transformational leadership involves assessing followers' motives, satisfying their needs, and treating them as full human beings (Bass, 1985; Bass & Avolio, 1990; Burns, 1978; House, 1976).

There are several common threads throughout all of the versions of transformational leadership. Most researchers agree, for example, that transformational leaders should be strong role models and possess high moral values. They should be confident, competent, articulate, and have a strong sense of self-identity. These leaders are excellent listeners who take the time to learn about their followers' needs as well as their ideas related to the organization. They create a spirit of cooperation through a strong foundation of trust, loyalty, and shared beliefs.

Transformational leaders have a strong vision and incorporate their followers in developing this vision. This vision includes the values and norms of the organization. They are "change agents" who initiate and implement new directions (Bass, 1985; Bass & Avolio, 1990; Burns, 1978; House, 1976; Leithwood, 1992).

In the secondary school setting, researchers have found that transformational leadership practices can have a trickle-down, positive effect on students. Leithwood and Jantzi (2000)

found that transformational leadership improved both organizational conditions as well as student engagement. Verona and Young (2001) found that students scored higher on the New Jersey High School Proficiency Test if their principal practiced transformational leadership.

Transformational leaders create positive work environments which inspire followers to exceed expectations and maintain high moral standards. The focus is placed on the good of the organization, rather than the good of one, although each person feels cared for. Most people thrive in such a positive environment (Bass, 1985; Bass & Avolio, 1990; Burns, 1978; House, 1976; Leithwood, 1992).

This study will not analyze the leadership style of the program director due to the limited contact that freshmen students typically have with the program director. However, one would expect that motivated athletic training faculty members inspired by a transformational leader as program director, will work diligently to create positive learning environments, both in the classroom and clinical setting. When issues arise for students that threaten their retention, they will find faculty members who they can trust and who will listen to their concerns and issues. These highly motivated, caring faculty members will exceed expectations by identifying resources that can aid the athletic training student as well as following up regularly with the student to assess their progress. Students will have a clear sense that the ATEP in which they have enrolled is constantly striving to achieve excellence and will be proud to be a part of it.

### Summary

The literature review for this study has identified a multitude of factors that have been demonstrated to affect student retention. Most of these factors relate to the university as a whole, although many of them can be altered slightly to reflect program satisfaction as well. These include the quality of the academic environment, the clinical education experience, faculty

advising and support, Social Integration, Institutional Commitment (revised for this study to become Program Commitment), Goal Commitment, and Intent to Persist. Each of these constructs is well supported within the predominant theories of student retention, retention research studies, program evaluations and/or the requirements of the accreditation agency.

## Chapter 3

### Methods

#### Purpose of the Study

The purpose of this study was to analyze the effect of student satisfaction upon an athletic training student's decision to apply to an athletic training education program (ATEP) at the end of his/her freshman year. This study further looked to determine if the levels of student satisfaction with various aspects of the program resulted in statistically significant differences in the choice of a student to apply or not apply to the ATEP. The constructs from the literature related to the ATEP that will be specifically evaluated to determine student satisfaction included *Intellectual Integration*, clinical education, faculty advising and support, *Social Integration*, *Program Commitment*, *Goal Commitment*, and *Intent to Persist*. The two constructs, Goal Commitment and Intent to Persist are not directly related to things in which the ATEP can control. Rather, they embody the intrinsic motivation and desire of the student. However, both are influenced by the quality of the program (Tinto, 1987).

#### Research Design

This research project was conducted as a survey study. There was no manipulation of an independent variable or random assignment to groups (Johnson & Christensen, 2000). The *Athletic Training Student Persistence Survey* (Appendix A) was developed by the researcher after a thorough review of the literature as well as examining a number of program evaluations from various ATEPs and looking for themes among them. The most commonly occurring themes were then used to develop survey items. A readability pilot was conducted by a panel of athletic training experts to establish content validity and readability. A readability pilot was also conducted with a group of higher education experts to establish readability. After any necessary

revisions were made, the survey was mailed to 41 (Johnson & Christensen, 2000) of the program directors of undergraduate ATEPs nationally in which the students' first opportunity to apply to the program occurred during the spring semester of their freshman year. This group was randomly selected using a table of random numbers. This study utilized one-stage cluster sampling, in which a group of clusters is randomly selected from the larger group of all clusters in the population. Within the selected group of clusters, all of the members are included in the sample (Johnson & Christensen, 2000). This study surveyed all of the freshman students ( $n = 603$ ) in the ATEPs that were chosen for the study.

This study was cross-sectional in design, as data was collected at a single point in time from two groups, freshmen who chose to apply to the program and freshmen who decided not to apply to the program (Johnson & Christensen, 2000). After the program application deadline, (generally around April 1st), the faculty member who taught the spring semester freshman athletic training course was asked to distribute the surveys to the students during class.

### Sample

The population for this study included all of the freshmen students ( $N = 1416$ ) in all Commission on Accreditation of Allied Health Education Programs (CAAHEP) accredited undergraduate athletic training education programs ( $N = 83$ ) in which the students' first opportunity to apply to the program was during the spring of their freshman year. Programs accredited as of December 1, 2003 were included. Of these programs, approximately 50% ( $n = 41$ ) were randomly selected, using a table of random numbers, for participation in the study. This study utilized one-stage cluster sampling by surveying all of the second-semester freshman students ( $n = 603$ ) in the ATEPs that are chosen for the study (Johnson & Christensen, 2000).

Freshman athletic training students each completed the *Athletic Training Student Persistence Survey*.

The total number of accredited programs as of December 1, 2003 was 243. It was not known at the time of the study's inception how many programs allow students to apply to the ATEP during the spring of their freshman year, although it was estimated to be approximately 60% or 146. Randomly selecting 50% of these would have yielded a sample of 73 programs. This estimation was based on an informal poll completed by those who subscribe to the Athletic Training Education list serve through Yahoo Groups. The researcher later e-mailed and/or called each program director to accurately determine their initial application deadline. It was unknown initially how many freshmen would be in their second semester at each school, although it was estimated to be between 15 and 35 students per freshman class. This was later determined during the initial contact with each program director. Using these estimates, the sample was expected to include approximately 1825 freshmen students and the population was expected to include approximately 3650. According to Johnson and Christensen (2000), if the population is 3500, the sample only needs to include 346 participants. However, they encourage researchers to use larger sample sizes if there are multiple categories (applicants/non-applicants, males/females, ethnic groups, students at schools with various athletic programs, etc). Cluster sampling, which is utilized in this research, also requires more participants. In addition, "the larger the sample size the greater the precision of statements about the population based on the sample" (Johnson & Christensen, 2000, p. 179).

### Null Hypotheses

The null hypotheses as they relate to each research question are as follows:

1. There will be no significant differences for any of the constructs (Intellectual Integration, Social Integration, Academic Advising, Program Commitment, Goal Commitment, Intent to Persist and Clinical Education in ATEPs) between those participants who applied to the program and those participants who chose not to apply.
2. There will be no significant differences in satisfaction with each of the constructs between those participants who applied to the program and those who did not.
3. There will be no significant differences in any of the following demographic variables (age, gender, race, size of the athletic program, high school GPA, college GPA, SAT scores, ACT scores, and average grades in athletic training and science Courses) between those participants who applied to the program and those who did not.
4. There will be no significant differences in the size of the school's athletic program (NCAA Div. I, II, III, or NAIA) between those participants who applied to the program and those who did not.

### Instrumentation

Several of the items in the survey were adapted from Cabrera, Nora, and Castaneda's 1993 survey research which was used to determine the extent to which the two main retention theories by Bean and Tinto can be merged to explain freshman retention. Their survey was designed to evaluate student satisfaction with the university as a whole. Whenever possible, items were adapted to reflect satisfaction specifically within the athletic training program. Survey items that could not be adapted to reflect the ATEP were not included in this current research survey. The items that were adapted utilize the 5-point Likert scale.

Three survey items were adapted to serve as measures of the constructs *Academic Integration* and *Courses* (Cabrera, Nora, & Castaneda, 1993). A series of factor analyses demonstrated that Tinto's construct Academic Integration converged with Bean's construct Courses (Cabrera, Castaneda, Nora, & Hengstler, 1992). For the purpose of this study, this construct was referred to as Intellectual Integration, which was assessed by the following items: (1) "In my athletic training Courses, I have performed academically as well as I anticipated I would," (2) "Overall, I am satisfied with my athletic training course of study, and (3) "I am satisfied with my athletic training academic experience."

The survey measured the construct Social Integration via two survey items which were also adapted for ATEPs (Cabrera, Nora, & Castaneda, 1993). A series of confirmatory factor analyses demonstrated that these two items, prior to their adaptation for athletic training, were the best indicators of the construct as well as the most valid. These two statements are: (1) "Since coming to this school, I have developed close personal relationships with other athletic training students," and (2) "It has been easy for me to meet and make friends with other athletic training students at my school."

Five items in the survey were adapted to represent Tinto's construct, *Institutional Commitment*, and Bean's construct *institutional fit and quality*. Prior to their adaptation to athletic training, researchers established that these five statements converged into a single construct (Cabrera, Nora, & Castaneda, 1993). This has been adapted for ATEPs and labeled as Program Commitment, which will be assessed by the following items: (1) "I am confident that I have made the right decision in choosing this athletic training program," (2) "It is very important for me to graduate from this athletic training program as opposed from some other program or school," (3) "I feel I belong in this athletic training program," (4) "My education in this athletic

training program will help me secure future employment and/or admission to graduate school,” and (5) “My close friends rate this athletic training program as a quality program.” The foundation for a student’s Commitment to an institution is the institution’s demonstrated Commitment to that student (Tinto, 1987). Therefore, the construct, Program Commitment is an indirect measure of how committed the ATEP is to the student, which ultimately influences student satisfaction.

Two items were adapted from Cabrera, Nora, and Castenada’s (1993) survey to measure the construct, Goal Commitment. These items were: (1) “It is important for me to get a college degree in athletic training” and (2) “It is important for me to finish my athletic training program of study.” One final item was adapted to measure Bean’s construct, Intent to Persist: “It is likely that I will continue in this athletic training program next fall.” The two constructs, Goal Commitment and Intent to Persist are not directly related to things in which the ATEP can control. Rather, they embody the intrinsic motivation and desire of the student. However, both are influenced by the quality of the program (Tinto, 1987).

The remaining items in the *Athletic Training Student Persistence Survey* were developed by the researcher from personal experiences teaching in a CAAHEP-accredited ATEP, reviewing the literature, and by reviewing several undergraduate ATEP program evaluation forms. The researcher posted an e-mail on the Athletic Training List Serve requesting ATEPs to share their program evaluation tool. Several schools responded. The researcher reviewed forms from the University of Charleston, the University of Findlay, Duquesne University, and West Virginia Wesleyan College to identify commonalities. Several themes were common to most of the evaluation forms: academic environment, clinical education, Academic Advising, leadership, and facilities and equipment. The Standards and Guidelines (Commission on Accreditation of

Allied Health Education Programs, 2001) were also reviewed to ensure that areas critical to program accreditation, which directly affect the freshman student experience, were included in the survey. Academic Advising and clinical education were also common attrition themes in clinical laboratory science and clinical laboratory technician programs (Laudicina, 1997). All of these items also utilize a 5-point Likert scale.

Academic Advising was addressed in two of the four program evaluations that were reviewed. Two items in the survey evaluated the effectiveness and availability of the student's athletic training academic advisor: (1) "My athletic training academic advisor is receptive to my needs & concerns," and (2) "My athletic training academic advisor is available to answer my questions." The quality of faculty advising has a strong influence on retention. The academic advisor is in the ideal position to identify obstacles to persistence as well as strategies for combating them. Dealing with these issues in a timely manner ultimately leads to higher rates of retention (Astin, 1983; Lenning, Bean, & Sauer, 1980; Thomas, 2002; Thurber, Hollingsworth, Brown, & Whitaker, 1989).

The quality of the clinical education experience was prominent among all of the program evaluations. In most programs, freshmen students are required to complete clinical observation hours during their freshman year as an application requirement. Often, students are treated poorly during this time. They spend a great deal of their time filling and carrying water bottles and coolers (Miller & Berry, 2002). One student even mentioned hazing occurring during the freshman clinical experience (Anonymous, personal communication, January 5, 2004).

CAAHEP (2001) described the importance of the clinical education experience:

Ample opportunity should be provided for supervised student coverage of athletic practices and competitive events in both men's and women's sports and physical

activities including, but not limited to, activities such as football, soccer, hockey, wrestling, basketball, gymnastics, volleyball, lacrosse, and rugby. In addition, these experiences should include adequate opportunities for observation of and involvement in the first aid and emergency care of a variety of acute athletic injuries and illnesses (Section II, A., 1., f., ¶ 4).

Three survey items evaluated the student's clinical education experience: (1) "My athletic training clinical observation experiences have been interesting," (2) "My athletic training clinical observation experiences have been challenging," and (3) "I am satisfied with the quality of my athletic training clinical instructors."

The following set of questions assessed to what degree each of the constructs affected the student's decision to apply to the ATEP and also utilized the 5-point Likert scale. These items included: (1) "Overall, my satisfaction with my academic experience influenced my decision to apply to the athletic training education program," (2) "Overall, my satisfaction with the Academic Advising I received influenced my decision to apply to the athletic training program," (3) "Overall, my satisfaction with my clinical education observation experience influenced my decision to apply to the athletic training program," and (4) "Overall, my satisfaction with my relationships with other athletic training students influenced my decision to apply to the athletic training program."

This instrument utilized a 5-point Likert scale consisting of the following range: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree. Demographic data was collected using open-ended and multiple choice questions.

The demographic characteristics collected via this survey were age, gender, race, high school GPA, college GPA, SAT scores, ACT scores, and average grades in athletic training and

science Courses, as reported by the student. Participants were also asked to report the size of their athletic program as NCAA Division I, II, III, or NAIA.

The survey also included one open-ended question: “Other factors influenced my decision to apply to the athletic training program. Please explain.” Two lines of blank space were provided for explanation and/or elaboration.

The survey assessed whether or not the student applied to the ATEP: “I have applied for formal admission into the athletic training education program. Yes or No.” It also assessed whether or not the student was eligible to apply: “I met the minimum requirements to apply to the athletic training education program. Yes or No or Not Sure.”

The survey should have taken students 5-10 minutes to complete. Once the surveys were completed, the faculty member was asked to collect the surveys, place them in the self-addressed, stamped envelope, and mail it to the researcher.

#### Data Collection

This research project utilized a self-reported questionnaire (Johnson & Christensen, 2000). The survey instruments were mailed in a large packet, including a cover letter (Appendix B) explaining the survey to the program director. The cover letter explained the purpose of the study, the assurance of anonymity, gratitude for participation, and instructions. The enclosed packet contained enough *Athletic Training Student Persistence Surveys* for each freshman student in the program. It also contained a cover letter for each student (Appendix C) explaining the purpose of the study, the assurance of anonymity, our gratitude for participation, and instructions. The program director’s cover letter explained that these surveys should have been distributed to the freshmen by the program director or another faculty member who had the freshmen in class. Once the students completed the survey, they placed them in the large self-

addressed, stamped envelope provided and the professor mailed the envelope. The program directors were asked to return the survey instruments by April 20, 2004 for data entry and analysis. One week after the initial mailing, a follow-up postcard was sent to thank those who have completed and returned their surveys, to remind those who have not mailed their surveys to please do so as soon as possible, and to offer to send another packet of materials if needed. A return rate of 50% plus one was sought to assure generalizability of the findings (Kerlinger & Lee, 2000). An approval from the Marshall University Institutional Review Board was obtained prior to the survey's being mailed to the participants (Appendix D).

The predictor variables (or independent variables) were the level of student satisfaction with the various aspects of the athletic training education program and its faculty. They were operationalized as the Likert Scale score the students chose on the survey for each survey item related to satisfaction with the program. Other predictor variables for this study were the demographic items including age, gender, race, size of the athletic program, high school GPA, college GPA, SAT scores, ACT scores, and average grades in athletic training and science Courses. The dependent variable was freshman retention, operationalized by whether or not students chose to apply to the ATEP during the spring semester of their freshman year.

### Data Analysis

The data was analyzed using Statistical SPSS for Windows version 11.0. A confirmatory factor analysis was conducted to provide construct validity for the survey instrument.

Cronbach's Alpha was computed to verify the internal consistency of the survey, based on the average inter-item correlation. Classification statistics were used to determine how well the predictions model developed for this study confirmed what was observed in the data.

Descriptive statistics were used to initially analyze the data. Means, standard deviations, frequencies, and percentages were computed for each of the variables. In addition, the range was calculated for the questions regarding college GPA, high school GPA, SAT scores, ACT scores, and age. The next set of data analyses utilized a bivariate correlation (Pearson's  $r$ ) to look for predictor variables which correlate highly with the dependent variable. Finally, the tests of equality of group means were calculated to determine if there were significant differences between groups for each of the variables. (Gravetter & Wallnau, 1995). The significance level for all data was held to an alpha = .05 level.

Content analysis was utilized to look for recurring themes among the responses to the open-ended question. The researcher used inductive analysis to discover these themes as they emerged through interacting with the data. Open coding, which emphasizes the importance of being open to new possibilities, was used to label each recurring theme (Patton, 2002).

### Summary

The methods utilized in this chapter determined with which areas of the athletic training program freshmen students were satisfied, with which areas they were dissatisfied, and which factors affected their decision to apply or not to apply to the ATEP. It also sought to determine if there was a correlation between program satisfaction and the decision of a freshman student to apply to the ATEP.

## Chapter 4

### Presentation and Analysis of the Data

The purpose of this study was to analyze the effect of student satisfaction upon an athletic training student's decision to apply to an athletic training education program (ATEP) at the end of his/her freshman year. This study further attempted to determine if the levels of student satisfaction with various aspects of the program resulted in statistically significant differences in the choice of a student to apply or not apply to the ATEP.

The predictor variables (or independent variables) were the levels of student satisfaction with the various aspects of the athletic training education program and its faculty. They were operationalized as the Likert Scale score the students chose on the survey for each survey item related to satisfaction with the program. Other predictor variables for this study were the demographic items including age, gender, race, size of the athletic program, high school GPA, college GPA, SAT scores, ACT scores, and average grades in athletic training and science Courses. The dependent variable was freshman retention, operationalized by whether or not students chose to apply to the ATEP during the spring semester of their freshman year.

This chapter provides a description and analysis of the data collected in this study. The following sections are included: (a) descriptive data, (b) statistical tools, (c) discriminant analysis, (d) major findings, (e) ancillary findings, and (f) summary of findings.

#### Descriptive Data

The population for this study consisted of all freshmen athletic training students enrolled in Commission on Accreditation of Allied Health Education Programs (CAAHEP) accredited undergraduate athletic training education programs in which the students' first opportunity to apply to the program is during the spring of their freshman year (N = 1416 freshmen students, N

= 83 programs). An additional criterion was that the program's application deadline be a minimum of 14 days prior to the beginning of final exams. This allowed ample opportunity for the administration of the survey. The sample (n = 603 freshmen students, n = 41 programs) consisted of approximately 50% of the programs in the population that were selected using a table of random numbers. At each of the programs included in the study, all eligible freshmen were surveyed.

Three mailings, two e-mails, and at least one phone call were made to each program chosen to participate. The first mailing was within one week of the program's application deadline. For those programs whose deadlines had already passed, this mailing was done on March 15, 2004. On the same day as the first mailing, an e-mail was sent to the Program Directors to inform them that they had been randomly chosen to participate in this study and that the survey packets would be arriving soon. One week following the first mailing, a postcard was sent to the Program Directors reminding them to distribute the surveys and contact the researcher if they had not yet received a packet. Six days after the postcard was sent, another reminder e-mail was sent to each Program Director containing the same message that appeared in the postcard. Two days after the second e-mail was sent, the researcher phoned the Program Directors to ensure that they had received the packet and to remind them to distribute the surveys. The following day, a full second mailing was sent out to each program unless the program director had previously indicated that the surveys had been completed and returned. Out of 603 surveys that were mailed, 347 were returned for a response rate of 58%. There were no unusable surveys.

The demographic data collected from each participant included (a) age, (b) gender, (c) race, (d) size of the athletic program, (e) high school GPA, (f) college GPA, (g) SAT score, (h)

ACT score, and (i) average grades in athletic training and science Courses. Every student who participated in this study was at least 18 years old ( $M = 19.01$ ,  $SD = 1.06$ ), but the oldest student reported an age of 43 years. All 347 participants responded to the question that asked gender, with 113 (32.6%) reported male and 234 (67.4%) reported female. The survey question regarding race was answered by 343 of respondents with four who did not respond. Most (300) participants reported being Caucasian (86.5%), while 28 (8.1%) reported being African-American, ten (2.9%) reported being Hispanic, one (0.3%) reported being Asian, two (0.6%) reported being both African-American and Hispanic, one (0.3%) reported being West Indian, and one (0.3%) reported that their race was unknown. Because of the relatively small number of minorities represented in this sample, the author chose to recode this variable and found that 300 (86.5%) reported being Caucasian, while 43 (12.4%) reported being non-Caucasian. This is a new variable which has been labeled “race recoded.”

The largest group (139) of participants (40.1%) reported being at a school in which most sports competed at the NCAA Division I level, while 97 (28.0%) reported being at a school in which most sports competed at the NCAA Division II level, 81 (23.3%) reported being at a school in which most sports competed at the NCAA Division III level, and 30 (8.6%) reported being at a school in which most sports competed at the NAIA level. This variable was also recoded to discriminate between larger athletic programs (NCAA Division I) and smaller athletic programs (NCAA Division II, III, and NAIA). As previously reported, 139 (40.1%) of the participants reported being at a school in which most sports competed at the NCAA Division I level and 208 (59.9%) reported being at a school in which most sports competed at the NCAA Division II, III, or NAIA level.

The participants were asked to report their high school GPAs ( $M = 3.44$ ,  $SD = 0.44$ ), the highest SAT score earned ( $M = 1072.62$ ,  $SD = 111.32$ ), and the highest ACT score earned ( $M = 22.64$ ,  $SD = 3.12$ ). The ACT scores and SAT scores were then recoded into z-scores ( $M = 0.02$ ,  $SD = 1.0$ ) through the following calculation: ACT z-score equals the ACT score minus the ACT mean for that group divided by the standard deviation, and the SAT z-score equals the SAT score minus the SAT mean for that group divided by the standard deviation. This was done because most students took either the SAT exam or the ACT exam, but not both. The recalculation into a single z-score for each participant allowed the researcher to objectively compare these results. Participants also reported their average athletic training and science course grades (1 = A, 2 = B, 3 = C, 4 = D, 5 = F) ( $M = 1.70$ ,  $SD = .68$ ).

#### Statistical Tools

This study collected data by the use of the *Athletic Training Student Persistence Survey* (Appendix A) developed by the researcher after a thorough review of the literature as well as examining a number of program evaluations from various ATEPs attempting to establish themes among them. This instrument was designed to measure the level of satisfaction with various aspects of the program as reported by freshmen athletic training students at CAAHEP accredited ATEPs.

The survey consisted of four major sections. In the first section, participants were asked to rate their satisfaction with various aspects of the ATEP using a five-point Likert scale with one being the lowest rating and five being the highest rating. This instrument utilized a 5-point Likert scale consisting of the following range: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

The second section used the same Likert scale, but asked the participants to rate how much each major category (or construct) affected their decision to apply to the program. There was also one open-ended question that allowed participants to describe any other factors that influenced their decision to apply to the program. The third section included only two questions: whether or not they applied to the ATEP and if they had met the minimum application requirements. The final section collected demographic data including age, gender, race, size of the athletic program, high school GPA, college GPA, SAT scores, ACT scores, and average grades in athletic training and science Courses. Demographic data were collected using open-ended and multiple choice questions. Statistical analyses were conducted using SPSS for Windows version 11.0.

The reliability of this instrument was determined to be 0.9 using Crombach's alpha. The classification results (Table 1) also demonstrated that the prediction model confirmed the results. Of the 265 participants who applied for admission, the model correctly predicted 240 (90.6%). Of the 80 participants who did not apply for admission, the model correctly predicted 59 (73.8%). Of the total number of cases, 86.7% were correctly classified.

Table 1

*Classification Results<sup>a</sup>*

		Have applied for admission	Predicted Group Membership		Total
			yes	no	
Original	Count	yes	240	25	265
		no	21	59	80
		Ungrouped cases	2	0	2
%		yes	90.6	9.4	100.0
		no	26.3	73.8	100.0
		Ungrouped cases	100.0	.0	100.0

a. 86.7% of original grouped cases correctly classified.

A confirmatory factor analysis was utilized to support the construct validity of the questionnaire by confirming the theorized constructs. The Rotated Factor Matrix (Table 2) supports the existence of four distinct constructs within the questionnaire. Any survey item that loaded at .450 or greater was considered to load significantly on that factor, and therefore, validate that construct. Two of the initial theorized constructs, Goal Commitment and Program Commitment, were shown to load as a single construct which will be referred to as Commitment. The following survey items loaded very well on Factor 1, Commitment: chose the right ATEP (.793), important to graduate from this ATEP (.823), belonging in the ATEP (.801), future employment or graduate school (.754), getting a college degree in AT (.920), and importance in finishing this ATEP (.923). The following survey items loaded very well on Factor 2, or Intellectual Integration: academic performance (.540), course of study (.654), and academic experience (.729). The following survey items loaded very well on Factor 3, or Social Integration: made friends with athletic training students (.842) and easy to meet and make athletic training student friends (.817). The following survey items loaded very well on Factor 4, or Academic Advising: academic advisor is receptive to needs and concerns (.731) and academic advisor is available (.899). The clinical education construct survey items including clinical observation being interesting, clinical education being challenging, and clinical instructor quality, were not shown to load well on any particular factor. Therefore, this construct was not supported. The final survey item, close friends rating this as a quality ATEP, also did not load highly on any particular factor and, therefore, does not appear to support any of the constructs.

Table 2

*Rotated Factor Matrix<sup>a</sup>*

	Factor			
	1	2	3	4
Academic Performance	.006	.540	.003	.132
Course of Study	.388	.654	.015	.209
Academic Experience	.235	.729	.084	.191
Academic Advisor - needs & concerns	.105	.299	.124	.731
Academic Advisor - availability	.099	.222	.033	.899
Clinical Observation - interesting	.298	.384	.325	-.018
Clinical Observation - challenging	.198	.373	.224	.047
Clinical Instructor quality	.133	.430	.205	.237
Made friends with ATS	.146	.109	.842	.062
Easy to meet & make ATS friends	.127	.118	.817	.098
Chose the right ATEP	.793	.322	.135	.119
Important to graduate from this ATEP	.823	.173	.172	.073
Belonging in the ATEP	.801	.219	.215	.123
Future employment or grad school	.754	.184	.116	.112
Close friends rate as quality ATEP	.222	.324	.242	.236
College degree in AT	.920	.117	.088	.048
Finish ATEP	.923	.142	.064	.055

Extraction Method: Maximum Likelihood.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

## Discriminant Analysis

Many individual variables were found to differ significantly between the two groups, those who chose to apply and those to did not apply to the athletic training education program. The complete results are located in Table 3.

Table 3

*Tests of Equality of Group Means*


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	F	Sig.
Academic Performance	4.290	0.039
Course of Study	25.239	0.000
Academic Experience	14.016	0.000
Academic Advisor - needs & concerns	0.214	0.644
Academic Advisor - availability	0.785	0.376
Clinical Observation - interesting	17.664	0.000
Clinical Observation - challenging	2.364	0.125
Clinical Instructor quality	3.263	0.072
Made friends with ATS	14.077	0.000
Easy to meet & make ATS friends	6.187	0.013
Chose the right ATEP	93.881	0.000
Important to graduate from this ATEP	91.415	0.000
Belonging in the ATEP	132.147	0.000

	F	Sig.
Future employment or grad school	81.418	0.000
Close friends rate as quality ATEP	9.053	0.003
College degree in AT	122.945	0.000
Finish ATEP	131.838	0.000
Likely to continue next fall	162.210	0.000
Satisfaction with academic experience	70.290	0.000
Satisfaction with Academic Advising	34.147	0.000
Satisfaction with clinical education	80.100	0.000
Satisfaction with ATS relationships	62.823	0.000
Met minimum requirements	23.697	0.000
College cumulative GPA	5.953	0.015
High School GPA	2.207	0.139
AT and science course grades	4.869	0.028
Age	2.249	0.135
Gender	0.818	0.367
Sport Division	1.479	0.225
Race recoded	0.143	0.706

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There were significant differences between the two groups for all three of the individual variables that were related to the construct, Intellectual Integration. There was a significant difference ( $F = 4.290, p < .05$ ) between the two groups for the survey item “In my athletic

training Courses, I have performed academically as well as I anticipated I would.” Students who applied for admission were more satisfied ( $M = 3.834$ ,  $SD = 0.972$ ) than students who did not apply for admission ( $M = 3.559$ ,  $SD = 0.904$ ). There was also a significant difference ( $F = 25.239$ ,  $p < .01$ ) between groups for the survey item “Overall, I am satisfied with my athletic training course of study.” The students who applied for admission were more satisfied ( $M = 4.221$ ,  $SD = 0.743$ ) with their course of study than the students who did not apply ( $M = 3.677$ ,  $SD = 0.888$ ). There was also a significant difference between groups ( $F = 14.016$ ,  $p < .01$ ) in the third variable that composes the Intellectual Integration construct, “I am satisfied with my athletic training academic experience.” Once again, the students who applied for admission were more satisfied ( $M = 4.166$ ,  $SD = 0.758$ ) with the academic experience than those students who did not apply for admission ( $M = 3.765$ ,  $SD = 0.813$ ).

The two groups differed ( $F = 17.664$ ,  $p < .01$ ) on the survey item “My athletic training clinical observation experiences have been interesting.” Students who applied for admission were more satisfied in this area ( $M = 4.198$ ,  $SD = 0.715$ ) than students who chose not to apply for admission ( $M = 3.735$ ,  $SD = 1.002$ ).

There were significant differences between the groups for both variables which were related to the construct, Social Integration. The groups differed ( $F = 14.077$ ,  $p < .01$ ) on the survey item “Since coming to this school, I have developed close personal relationships with other athletic training students.” Again, the students who applied for admission were more satisfied ( $M = 4.184$ ,  $SD = 0.894$ ) than students who chose not to apply for admission ( $M = 3.691$ ,  $SD = 1.096$ ). The groups also differed ( $F = 6.187$ ,  $p < .05$ ) on the survey item “It has been easy for me to meet and make friends with other athletic training students at my school.”

Students who applied for admission were more satisfied ( $M = 4.203$ ,  $SD = 0.797$ ) with this area than those who did not apply for admission ( $M = 3.912$ ,  $SD = 0.973$ ).

All six variables that were related to the construct, Commitment, were significantly different between the two groups. These variables, overall, showed some of the largest differences. The groups differed ( $F = 93.881$ ,  $p < .01$ ) on the survey item “I am confident that I have made the right decision in choosing this athletic training program.” Students who applied for admission rated this variable higher ( $M = 4.300$ ,  $SD = 0.838$ ) than those who chose not to apply ( $M = 3.088$ ,  $SD = 1.075$ ). The groups differed ( $F = 91.415$ ,  $p < .01$ ) as well on the survey item “It is very important for me to graduate from this athletic training program as opposed to some other program or school.” Those students who applied for admission rated this variable higher ( $M = 4.277$ ,  $SD = 0.864$ ) than those who chose not to apply for admission ( $M = 2.971$ ,  $SD = 1.293$ ). The groups differed ( $F = 132.147$ ,  $p < .01$ ) on the survey item “I feel I belong in this athletic training program.” Students who applied for admission rated this variable higher ( $M = 4.300$ ,  $SD = 0.774$ ) than students who chose not to apply for admission ( $M = 2.868$ ,  $SD = 1.208$ ). The groups differed ( $F = 81.418$ ,  $p < .01$ ) on the survey item “My education in this athletic training program will help me secure future employment and/or admission to graduate school.” Students who applied for admission rated this variable higher ( $M = 4.401$ ,  $SD = 0.701$ ) than students who chose not to apply for admission ( $M = 3.353$ ,  $SD = 1.169$ ). The groups differed ( $F = 122.945$ ,  $p < .01$ ) on the survey item “It is important for me to get a college degree in athletic training.” Students who applied for admission rated this variable higher ( $M = 4.387$ ,  $SD = 0.725$ ) than students who chose not to apply ( $M = 3.015$ ,  $SD = 1.287$ ). The groups differed ( $F = 131.838$ ,  $p < .01$ ) as well on the final survey item related to the construct, Commitment, “It is important for me to finish my athletic training program of study.” Again, students who applied

for admission rated this variable higher ( $M = 4.502$ ,  $SD = 0.681$ ) than students who chose not to apply ( $M = 3.074$ ,  $SD = 1.375$ ).

Several variables that did not relate to any of the four constructs were also found to differ significantly between the two groups. The groups differed ( $F = 9.053$ ,  $p < .01$ ) on the survey item “My close friends rate this athletic training program as a quality program.” Students who applied for admission rated this variable higher ( $M = 3.991$ ,  $SD = 0.788$ ) than students who chose not to apply ( $M = 3.662$ ,  $SD = 0.784$ ). The groups also differed ( $F = 162.210$ ,  $p < .01$ ) on the survey item “It is likely that I will continue in this athletic training program next fall.” Students who applied for admission rated this variable higher ( $M = 4.502$ ,  $SD = 0.812$ ) than students who chose not to apply ( $M = 2.677$ ,  $SD = 1.540$ ). In addition, the groups differed ( $F = 23.697$ ,  $p < .01$ ) on the survey item “I met the minimum requirements to apply to the athletic training education program.” Of the 338 students who responded to this item, 242 (69.7%) reported that they did meet the minimum requirements while 30 (8.6%) reported that they did not. An additional 66 (19.0%) students reported that they were not sure if they had met the minimum admission requirements.

There were also significant differences between groups for all of the summary variables which asked respondents what impact each area had on their decision to apply for admission. The groups differed ( $F = 70.290$ ,  $p < .01$ ) on the survey item “Overall, my satisfaction with my academic experience influenced my decision to apply to the athletic training education program.” Students who applied for admission rated this variable higher ( $M = 3.908$ ,  $SD = 0.834$ ) than those students who chose not to apply ( $M = 2.882$ ,  $SD = 1.015$ ). The groups differed ( $F = 34.147$ ,  $p < .01$ ) on the survey item “Overall, my satisfaction with the Academic Advising I received influenced my decision to apply to the athletic training program.” Students who applied

for admission rated this variable higher ( $M = 3.654$ ,  $SD = 1.012$ ), than students who chose not to apply ( $M = 2.853$ ,  $SD = 0.902$ ). The groups differed ( $F = 80.100$ ,  $p < .01$ ) on the survey item “Overall, my satisfaction with my clinical education observation experience influenced my decision to apply to the athletic training program.” Students who applied for admission rated this variable higher ( $M = 4.009$ ,  $SD = 0.833$ ) than students who chose not to apply for admission ( $M = 2.897$ ,  $SD = 1.067$ ). The groups also differed ( $F = 62.823$ ,  $p < .01$ ) on the fourth survey item in this group “Overall, my satisfaction with my relationships with other athletic training students influenced my decision to apply to the athletic training program.” Students who applied for admission rated this variable higher ( $M = 3.843$ ,  $SD = 0.925$ ) than students who chose not to apply ( $M = 2.824$ ,  $SD = 0.929$ ).

There were also significant differences between the groups for two of the demographic variables. The groups differed ( $F = 5.953$ ,  $p < .05$ ) on the survey item which asked for the students cumulative grade point average (GPA) at their college. Students who applied for admission had higher ( $M = 3.097$ ,  $SD = 0.517$ ) college GPAs than students who chose not to apply ( $M = 2.902$ ,  $SD = 0.728$ ). The groups also differed ( $F = 4.869$ ,  $p < .05$ ) on the survey item which asked students to report the average grades they had received in their athletic training and science Courses. An ‘A’ average was labeled as a 1, a ‘B’ average was labeled as a 2, a ‘C’ average was labeled as a 3, a ‘D’ average was labeled as a 4, and an ‘F’ average was labeled as a 5. Students who applied for admission had higher grades ( $M = 1.654$ ,  $SD = 0.691$ ) than students who chose not to apply ( $M = 1.868$ ,  $SD = 0.710$ ).

## Major Findings

The major findings are presented in relation to the research questions which were used to develop this study.

*Research Question 1: With which constructs (Intellectual Integration, Social Integration, Academic Advising, Program Commitment, Goal Commitment, Intent to Persist and Clinical Education in ATEPs) are students most satisfied and unsatisfied?*

In order to calculate a mean for each construct that could be compared to the other constructs, the construct mean was divided by the number of questions related to that construct. For example, the mean for Intellectual Integration was 11.889. Three questions were related to that construct, and therefore, the comparable mean for Intellectual Integration was 3.963. Comparisons of the overall means for each construct can be seen in Table 4.

The first three questions on the Athletic Training Student Persistence Survey related to the construct Intellectual Integration. Respondents circled their responses on a scale of 5 for “strongly agree” to 1 “strongly disagree.” Complete results for each individual question are reflected in Appendix E. Within the group of 217 students who applied for admission, their satisfaction with their academic performance was a mean of  $M = 3.834$  ( $SD = 0.972$ ). Within the group of 68 students who did not apply for admission, their satisfaction with their academic performance was a mean of  $M = 3.559$  ( $SD = 0.904$ ). Overall, the students reported that their satisfaction with their academic performance was a mean of  $M = 3.768$  ( $SD = 0.962$ ).

The mean scores for satisfaction with the athletic training course of study were slightly higher for both groups. Of the students who applied for admission, satisfaction with the athletic training course of study was a mean of  $M = 4.221$  ( $SD = 0.743$ ). Students who did not apply for admission were less satisfied with their athletic training course of study ( $M = 3.677$ ,  $SD =$

0.888). Overall, the students were satisfied with their athletic training course of study ( $M = 4.091$ ,  $SD = 0.812$ ).

Students who applied for admission reported being relatively satisfied with their athletic training academic experience ( $M = 4.166$ ,  $SD = 0.758$ ). For those students who did not apply for admission, their satisfaction with their athletic training academic experience was a mean of  $M = 3.765$  ( $SD = 0.813$ ). Overall, the students reported that their satisfaction with their athletic training academic experience was a mean of  $M = 4.070$  ( $SD = 0.789$ ).

Table 4

*Comparable Means for each Construct*

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Construct	Mean
Intellectual Integration	3.963
Academic Advising	4.325
Social Integration	4.068
Commitment	4.064

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Questions four and five on the Athletic Training Student Persistence Survey related to the construct, Academic Advising. Respondents again circled their responses on a scale of 5 for “strongly agree” to 1 “strongly disagree.” Complete results are reflected in Appendix E. The overall comparable mean score for Academic Advising was  $M = 4.325$ . Within the group of 217 students who applied for admission, their satisfaction with their academic advisor being receptive to their needs and concerns was a mean of  $M = 4.290$  ( $SD = 0.841$ ). Within the group

of 68 students who did not apply for admission, satisfaction with their academic advisor being receptive to their needs and concerns was a mean of  $M = 4.235$  ( $SD = 0.900$ ). Overall, the students reported being satisfied with their academic advisor being receptive to their needs and concerns ( $M = 4.277$ ,  $SD = 0.854$ ).

Students who applied for admission were relatively satisfied with the availability of their academic advisor was a mean of  $M = 4.392$  ( $SD = 0.798$ ). For the students who chose not to apply, their satisfaction with the availability of their academic advisor was a mean of  $M = 4.294$  ( $SD = 0.774$ ). Overall, the students reported being satisfied with the availability of their academic advisor ( $M = 4.368$ ,  $SD = 0.792$ ).

Questions nine and ten on the Athletic Training Student Persistence Survey related to the construct, Social Integration. Respondents again circled their responses on a scale of 5 for “strongly agree” to 1 “strongly disagree.” Complete results are reflected in Appendix E. The overall comparable mean score for Social Integration was  $M = 4.068$ . Within the group of students who applied for admission, satisfaction with developing close personal relationships with other athletic training students was a mean of  $M = 4.184$  ( $SD = 0.894$ ). Students who did not apply for admission were less satisfied with developing close personal relationships with other athletic training students ( $M = 3.691$ ,  $SD = 1.096$ ). Overall, the students reported that their satisfaction with developing close personal relationships with other athletic training students was a mean of  $M = 4.067$  ( $SD = 0.967$ ).

Students who applied for admission reported their satisfaction with the ease in which they were able to meet and make friends with other athletic training students was a mean of  $M = 4.203$  ( $SD = 0.797$ ). For those students who chose not to apply for admission, satisfaction with the ease in which they were able to meet and make friends with other athletic training students

was a mean of  $M = 3.912$  ( $SD = 0.973$ ). Overall, the students reported being satisfied with the ease in which they were able to meet and make friends with other athletic training students ( $M = 4.133$ ,  $SD = 0.849$ ).

Questions eleven through fourteen and questions sixteen and seventeen related to the construct, Commitment. Respondents again circled their responses on a scale of 5 for “strongly agree” to 1 “strongly disagree.” Complete results are reflected in Appendix E. The overall comparable mean score for Commitment was  $M = 4.064$ . Within the group of 217 students who applied for admission, their satisfaction with their decision in choosing their athletic training program was a mean of  $M = 4.300$  ( $SD = 0.838$ ). Within the group of 68 students who did not apply, satisfaction with their decision in choosing their athletic training program was a mean of  $M = 3.088$  ( $SD = 1.075$ ). Overall, the students reported being satisfied with their decision in choosing their athletic training program ( $M = 4.011$ ,  $SD = 1.036$ ).

Students who applied for admission rated the importance of graduating from their athletic training program with a mean of  $M = 4.277$  ( $SD = 0.864$ ). Students who chose not to apply for admission rated the importance of graduating from the athletic training program with a mean of  $M = 2.971$  ( $SD = 1.293$ ). Overall, students rated the importance of graduating from their athletic training program with a mean of  $M = 3.965$  ( $SD = 1.128$ ).

Students who applied for admission reported feeling positively about belonging in their athletic training program ( $M = 4.300$ ,  $SD = 0.774$ ). Students who chose not to apply reported feeling less positive about belonging in their athletic training program ( $M = 2.868$ ,  $SD = 1.208$ ). Overall, students reported rated feeling relatively positive about belonging in the athletic training program ( $M = 3.958$ ,  $SD = 1.084$ ).

Students who applied for admission were satisfied with the athletic training program's ability to help them secure future employment and/or admission to graduate school ( $M = 4.401$ ,  $SD = 0.701$ ). Students who chose not to apply reported lower satisfaction with the athletic training program's ability to help them to secure future employment and/or admission to graduate school ( $M = 3.353$ ,  $SD = 1.169$ ). Overall, students reported that their satisfaction with the athletic training program helping them to secure future employment and/or admission to graduate school was a mean of  $M = 4.151$  ( $SD = 0.947$ ).

Students who applied for admission rated the importance of getting a college degree in athletic training with a mean score of  $M = 4.387$  ( $SD = 0.725$ ). Students who chose not to apply rated the importance of getting a college degree in athletic training with a mean score of  $M = 3.015$  ( $SD = 1.287$ ). Overall, students reported that the importance of getting a college degree in athletic training with a mean score of  $M = 4.060$  ( $SD = 1.065$ ).

Students who applied for admission rated the importance of finishing their athletic training program of study with a mean score of  $M = 4.502$  ( $SD = 0.681$ ). Students who chose not to apply for admission rated the importance of finishing their athletic training program of study with a mean score of  $M = 3.074$  ( $SD = 1.375$ ). Overall, students rated the importance of finishing their athletic training program of study with a mean score of  $M = 4.161$  ( $SD = 1.082$ ).

Although the three questions related to clinical education did not load as a construct, the results for those individual questions have still been reported. Within the group of 217 students who applied for admission, satisfaction with their clinical education observation experiences being interesting was a mean of  $M = 4.198$  ( $SD = 0.715$ ). Within the group of 68 students who did not apply for admission, satisfaction with their clinical education observation experiences being interesting was a mean of  $M = 3.735$  ( $SD = 1.002$ ). Overall, the students reported being

satisfied with their clinical education observation experiences being interesting ( $M = 4.088$ ,  $SD = 0.815$ ).

Students who applied for admission reported satisfaction with their clinical education observation experiences being challenging was a mean of  $M = 3.470$  ( $SD = 0.962$ ). For those students who chose not to apply for admission, their satisfaction with their clinical education observation experiences being challenging was a mean of  $M = 3.265$  ( $SD = 0.956$ ). Overall, students reported being somewhat satisfied with their clinical education observation experiences being challenging ( $M = 3.421$ ,  $SD = 0.963$ ).

Students who applied for admission were relatively satisfied with the quality of their athletic training clinical instructors ( $M = 4.267$ ,  $SD = 0.722$ ). For those students who chose not to apply for admission, their satisfaction with the quality of their athletic training clinical instructors was a mean of  $M = 4.088$  ( $SD = 0.685$ ). Overall, the students reported being satisfied with the quality of their athletic training clinical instructors ( $M = 4.225$ ,  $SD = 0.716$ ).

Students reported being most satisfied with their Academic Advising ( $M = 4.325$ ) and least satisfied with their Intellectual Integration ( $M = 3.963$ ). However, the lowest mean reported was for the overall students' satisfaction with their clinical education observation experiences being challenging with a mean of  $M = 3.421$  ( $SD = 0.963$ ).

*Research Question #2: What is the relationship, if any, between the satisfaction with each of the constructs and an athletic training student's decision to apply to an athletic training program at the end of his/her freshman year?*

Correlations were chosen to answer this research question. Pearson product-moment correlation coefficients were calculated for each of the supported constructs and the decision of

the student to apply to the athletic training program. The results are displayed in Table 5. There was a significant negative correlation ( $r = -.286, p < .01$ ) between Intellectual Integration and the decision to apply which indicated that students who were more satisfied with their Intellectual Integration were more likely to apply for admission to the athletic training program. There was also a significant negative correlation ( $r = -.579, p < .01$ ) between Commitment and decision to apply which indicated that the students who were more committed to their program were more likely to apply to the athletic training program. The other two constructs, Academic Advising and Social Integration, did not significantly correlate with the decision to apply.

Table 5

*Correlations Between the Constructs and the Athletic Training Student's Decision to Apply to an Athletic Training Program*

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	Decision to Apply
Intellectual Integration	-.286**
Academic Advising	-.046
Social Integration	-.169**
Commitment	-.579**

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\* $p < .05$ . \*\* $p < .01$ . (2-tailed)

*Research Question #3: What is the relationship, if any, between each of the following demographic variables (age, gender, race, size of the athletic program, high school GPA, college GPA, SAT scores, ACT scores, and average grades in athletic training and science Courses) and an athletic training student's decision to apply to an athletic training program at the end of his/her freshman year?*

Correlations and the discriminant analysis were also chosen to answer this research question. Pearson product-moment correlation coefficients were calculated for each of the demographic variables and the decision of the student to apply to the athletic training program. The correlation results are displayed in Table 6. None of the demographic variables significantly correlated with the decision of the student to apply to the athletic training program. However, the discriminant analysis did show a significant difference between groups for college cumulative GPA ( $F = 5.95, p < .01$ ) and average athletic training and science course grades ( $F = 4.87, p < .05$ ), although the differences were relatively small. Students who applied for admission reported higher college cumulative GPAs ( $M = 3.10, SD = 0.52$ ) than students who did not apply ( $M = 2.90, SD = 0.73$ ). The average course grades were coded as follows: 1 = A, 2 = B, 3 = C, 4 = D, 5 = F. Students who applied also reported higher average athletic training and science course grades ( $M = 1.65, SD = 0.69$ ) than those who chose not to apply ( $M = 1.87, SD = 0.71$ ).

Table 6

*Correlations Between the Demographic Variables and the Athletic Training Student's Decision to Apply to an Athletic Training Program*

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	Decision to Apply
College GPA	-.129*
High School GPA	-.084
SAT Score	-.076
ACT Score	-.019
Combined ACT/SAT z-score	-.038
Average Grades in AT and Science Courses	.127*
Age	.010
Gender	-.030
Race	-.065
Race Recoded	-.039
Sport Division	-.056

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\*  $p < .05$

*Research Question #4: What is the relationship, if any, between the size of the school's athletic program (NCAA Div. I, II, III, or NAIA) and the decision to apply to the ATEP by freshmen?*

The sport division variable was recoded such that the first group included NCAA Division I schools and the second group included all other smaller schools (NCAA Division II, III, and NAIA). There was not a significant correlation between the size of the school's athletic program and the decision to apply to the ATEP by freshmen ( $r = -.056, p = .299$ ). The discriminant analysis also showed no significant difference between the two groups for sport division.

#### Ancillary Findings

Several correlations were noted between the supported constructs. Social Integration was found to have a positive correlation ( $r = .295, p < .01$ ) with Commitment indicating that students who were socially integrated also tended to be committed. Intellectual Integration was found to have a positive correlation ( $r = .437, p < .01$ ) with Academic Advising indicating that students who were satisfied with their Academic Advising were also more satisfied with their Intellectual Integration. Intellectual Integration was also positively correlated ( $r = .416, p < .01$ ) with Commitment indicating that students who were intellectually integrated tended to be more committed. Academic Advising was also shown to correlate positively ( $r = .260, p < .01$ ) with Commitment indicating that students who were satisfied with their Academic Advising tended to be more committed.

The race (race recoded) of the student was shown to correlate significantly with two demographic variables. Race was found to have a negative correlation ( $r = -.215, p < .01$ ) with the ACT/SAT z-score indicating that minorities tended to have lower ACT and SAT scores than

Caucasian students. Race was also negatively correlated ( $r = -.336, p < .01$ ) with high school GPA indicating that minority students tended to have lower high school GPAs.

Intellectual Integration also correlated with two demographic variables. It was found to have a positive correlation ( $r = .208, p < .01$ ) with the ACT/SAT z-score indicating that students with higher ACT and SAT scores tended to be more intellectually integrated. Intellectual Integration was also found to correlate positively ( $r = .258, p < .01$ ) with high school GPA indicating that students with higher high school GPAs tended to be more intellectually integrated.

Several other relationships emerged through the Pearson product-moment correlation coefficients (Pearson's  $r$ ). Significant, positive correlations were noted between the quality of the clinical instructor and clinical observations being interesting ( $r = .421, p < .01$ ) and clinical observations being challenging ( $r = .373, p < .01$ ). This indicates that the more interesting and challenging students find their clinical observation experiences to be, the higher they will rate their clinical instructor.

Social Integration was positively correlated with all three survey items related to clinical education including clinical observation experiences being interesting ( $r = .359, p < .01$ ), clinical observation experiences being challenging ( $r = .259, p < .01$ ), and clinical instructor quality ( $r = .248, p < .01$ ). This suggests that the more satisfied students were with their clinical education experience, the more they felt socially integrated as well.

One survey item asked students to agree or disagree with the statement "My friends rate this athletic training program as a quality program." This variable was shown to significantly correlate ( $p < .01$ ) with all four of the supported constructs. It was positively correlated with Social Integration ( $r = .307$ ), Intellectual Integration ( $r = .366$ ), Academic Advising ( $r = .363$ ),

and Commitment ( $r = .348$ ). This indicated that students whose friends rated the program highly, rated the program highly themselves.

The gender and race of the student were found to significantly correlate with several other demographic variables. The gender of the student was found to correlate positively ( $p < .01$ ) with both the college cumulative GPA ( $r = .227$ ) and the high school GPA ( $r = .378$ ), indicating that females earned higher overall GPAs in both college and high school. The race of the student was found to correlate negatively ( $p < .01$ ) with college cumulative GPA ( $r = -.267$ ), high school GPA ( $r = -.336$ ), and the SAT/ACT z-scores ( $r = -.215$ ). This indicated that minority students had lower high school and college GPAs, as well as lower SAT and ACT scores. Race was found to positively correlate ( $r = .215, p < .01$ ) with the grades received in athletic training and science Courses, which indicated that minority students received lower average grades in these Courses.

The content analysis of the open-ended question did not reveal any recurring themes. Therefore, the researcher did not proceed with an inductive analysis or open coding. These data were not used to draw conclusions.

### Summary of Findings

Of the students who participated in this study, approximately 2/3 were females and 1/3 were males and all were an average of 19 years of age. All were freshmen who were enrolled in their second semester of an accredited athletic training education program in which the first opportunity to apply for formal admission was in the spring semester and the application deadline had already passed.

The four research questions were evaluated by analyzing the participants' responses to the *Athletic Training Student Persistence Survey* on which students indicated their level of

satisfaction with various aspects of the athletic training education program by using a 5-point Likert scale from 5 (strongly agree) to 1 (strongly disagree). The survey assessed the students' satisfaction with four major supported constructs: Intellectual Integration, Academic Advising, Social Integration, and Commitment.

The mean scores for Social Integration ( $M = 4.068$ ) and Commitment ( $M = 4.064$ ) were very similar. Students reported being most satisfied with their Academic Advising ( $M = 4.325$ ) and least satisfied with their Intellectual Integration ( $M = 3.963$ ). However, the lowest mean reported was for the overall students' satisfaction with their clinical education observation experiences being challenging with a mean of  $M = 3.421$  ( $SD = .963$ ).

Pearson product-moment correlation coefficients were calculated for each of the supported constructs and the student's decision to apply to the athletic training program. The results are displayed in Table 4. The analysis indicated that students who were more satisfied with their Intellectual Integration were more likely to apply for admission to the athletic training program. Students who were more committed to their program were also more likely to apply to the athletic training program. The other two constructs, Academic Advising and Social Integration, did not significantly correlate with the decision to apply.

Pearson product-moment correlation coefficients were calculated for each of the demographic variables and the decision of the student to apply to the athletic training program. The results are displayed in Table 5. None of the demographic variables significantly correlated with the decision of the student to apply to the athletic training program. However, the discriminant analysis did show significant differences between groups for both college cumulative GPA and average grades in athletic training and science course grades.

Many individual variables were found to differ significantly between the two groups, those who chose to apply and those who did not apply to the athletic training education program. Overall, the students who chose to apply were more satisfied with the various aspects of the program than those who did not apply. The complete results are located in Table 6. There were significant differences between the two groups for all three of the individual variables that were related to the construct, Intellectual Integration. Students who applied for admission were more satisfied with their academic performance, their course of study, and their academic experience than those students who did not apply for admission.

Students who applied for admission were also more satisfied with their clinical education being interesting than students who chose not to apply for admission. Additionally, students who applied for admission were more satisfied than those who did not apply with the ease in which they made friends with other athletic training students.

All six variables that were related to the construct Commitment were significantly different between the two groups. Students who applied for admission rated the following variables higher than those who did not apply: choosing the athletic training program, importance of graduating from the athletic training program, feeling of belonging in the athletic training program, the education in this athletic training program helping to secure future employment and/or admission to graduate school, importance of getting a college degree in athletic training, and importance of finishing the athletic training program of study.

Several variables that did not relate to any of the four constructs were also found to differ significantly between the two groups. Students who applied for admission rated the following variables higher than students who chose not to apply: close friends rating the athletic training

program as a quality program, likeliness of continuing in the athletic training program the following fall, and meeting the minimum requirements to apply to the program.

There were also significant differences between groups for all of the summary variables which asked respondents what impact each area had on their decision to apply for admission. Again, the students who applied for admission were more satisfied with their overall academic experience, their overall Academic Advising, their overall clinical education observation experience, and their overall relationships with other athletic training students.

In addition, there were significant differences between the groups for two of the demographic variables. Students who applied for admission had higher college GPAs and average grades they had received in their athletic training and science Courses than students who chose not to apply.

Significant correlations were also noted between gender and race with certain demographic variables. Females earned higher overall GPAs than males in both college and high school. Minority students had lower high school and college GPAs, lower SAT and ACT scores, and lower average grades in athletic training and science Courses.

## Chapter 5

### Summary, Conclusions, and Recommendations

This chapter provides a summary, conclusions, and recommendations for future research. The following sections are included: (a) summary of purpose; (b) summary of procedures; (c) summary of descriptive data; (d) summary of findings and conclusions; (e) summary of ancillary findings; (f) implications; and (g) recommendations.

#### Summary of Purpose

The purpose of this study was to analyze the effect of student satisfaction upon an athletic training student's decision to apply to a Commission on Accreditation of Allied Health Education Programs (CAAHEP) accredited undergraduate athletic training education program (ATEP) at the end of his/her freshman year. This study further attempted to determine if the levels of student satisfaction with various aspects of the program resulted in statistically significant differences in the choice of a student to apply or not apply to the ATEP. The constructs from the literature related to the ATEP that were specifically evaluated to determine student satisfaction included *Intellectual Integration*, *Social Integration*, *Academic Advising*, *Program Commitment*, *Goal Commitment*, *Intent to Persist* and *Clinical Education*.

The following research questions were addressed in this study:

Q1: With which constructs (Intellectual Integration, Social Integration, Academic Advising, Program Commitment, Goal Commitment, Intent to Persist and Clinical Education in ATEPs) are students most satisfied and unsatisfied?

Q2: What is the relationship, if any, between the satisfaction with each of the constructs and an athletic training student's decision to apply to an athletic training program at the end of his/her freshman year?

Q3: What is the relationship, if any, between each of the following demographic variables (age, gender, race, size of the athletic program, high school GPA, college GPA, SAT scores, ACT scores, and average grades in athletic training and science Courses) and an athletic training student's decision to apply to an athletic training program at the end of his/her freshman year?

Q4: What is the relationship, if any, between the size of the school's athletic program (NCAA Div. I, II, III, or NAIA) and the decision to apply to the ATEP by freshmen?

The statistical analysis of the data related to these questions as well as the ancillary findings may provide useful freshman retention strategies for the administrators of accredited ATEPs within higher education institutions.

#### Summary of Procedures

This research project was conducted as a survey study. The *Athletic Training Student Persistence Survey* (Appendix A) was developed by the researcher and used to gather data. Of the 83 CAAHEP accredited ATEPs, 41 were included in the study resulting in 603 out of 1416 freshmen students included in the sample. This study utilized one-stage cluster sampling, in which a group of clusters was randomly selected from the larger group of all clusters in the population. Within the selected group of clusters, all of the members were included in the sample (Johnson & Christensen, 2000). This study was cross-sectional in design, as data were collected at a single point in time from two groups, freshmen who chose to apply to the program and freshmen who decided not to apply to the program (Johnson & Christensen, 2000). After the program application deadline, the faculty member who taught the spring semester freshman athletic training course was asked to distribute the surveys to the students during class.

The survey consisted of four major sections. In the first section, participants were asked to rate their satisfaction with various aspects of the ATEP using a Likert scale, from a scale of 1 (strongly disagree) to 5 (strongly agree). The second section used the same Likert scale, but asked the participants to rate how much each major category (or construct) affected their decision to apply to the program. There was also one open-ended question that allowed participants to describe any other factors that influenced their decision to apply to the program. The third section included only two questions and assessed whether or not they applied to the ATEP and if they had met the minimum application requirements. The final section collected used open-ended and multiple choice questions to gather demographic data including age, gender, race, size of the athletic program, high school GPA, college GPA, SAT scores, ACT scores, and average grades in athletic training and science Courses. A packet contained the surveys, a cover letter for each student, a cover letter for each program director, and a large self-addressed, stamped envelope. Following the mailing, each program director received a postcard reminder, a phone call, and multiple e-mails to enhance the return rate. Overall, 347 surveys were returned out of 603 mailed for a response rate of 58%, which exceeded the percentage sought for validation (Kerlinger & Lee, 2000). There were no unusable surveys.

The data were analyzed using SPSS 11.0 for Windows. The statistical procedures utilized included a confirmatory factor analysis, Cronbach's Alpha, classification statistics, bivariate correlations (Pearson's  $r$ ), and tests of equality of group means. The significance level for all data was held to an  $\alpha = .05$  level.

#### Summary of Descriptive Data

The participants in this study were asked to report age, gender, race, college grade point average (GPA), high school GPA, highest SAT score, highest ACT score, average grade in

athletic training and science Courses, and the sport team division at their school. All were freshmen who were enrolled in their second semester of an accredited athletic training education program in which the first opportunity to apply for formal admission was in the spring semester and the application deadline had already passed. Every student who participated in this study was at least 18 years old ( $M = 19.01$ ,  $SD = 1.06$ ), but the oldest student reported an age of 43 years. All 347 participants responded to the question of gender, with 113 (32.6%) reported male and 234 (67.4%) reported female. The survey question regarding race was answered by 343 of respondents with four who did not respond. Most (300) participants reported being Caucasian (86.5%), while 28 (8.1%) reported being African-American, ten (2.9%) reported being Hispanic, one (0.3%) reported being Asian, two (0.6%) reported being both African-American and Hispanic, one (0.3%) reported being West Indian, and one (0.3%) reported that their race was unknown. Because of the relatively small number of minorities represented in this sample, the author chose to recode this variable and found that 300 (86.5%) reported being Caucasian, while 43 (12.4%) reported being non-Caucasian.

The largest group (139) of participants (40.1%) reported being at a school in which most sports competed at the NCAA Division I level, while 97 (28.0%) reported being at a school in which most sports competed at the NCAA Division II level, 81 (23.3%) reported being at a school in which most sports competed at the NCAA Division III level, and 30 (8.6%) reported being at a school in which most sports competed at the NAIA level. This variable was also recoded to discriminate between larger athletic programs (NCAA Division I) and smaller athletic programs (NCAA Division II, III, and NAIA). As previously noted, 139 (40.1%) of the participants reported being at a school in which most sports competed at the NCAA Division I

level and 208 (59.9%) reported being at a school in which most sports competed at the NCAA Division II, III, or NAIA level.

The participants were asked to report their high school GPA ( $M = 3.44$ ,  $SD = 0.44$ ), the highest SAT score earned ( $M = 1072.62$ ,  $SD = 111.32$ ), and the highest ACT score earned ( $M = 22.64$ ,  $SD = 3.12$ ). The ACT scores and SAT scores were then recoded into z-scores ( $M = 0.02$ ,  $SD = 1.0$ ) through the following calculation: ACT z-score equals the ACT score minus the ACT mean for that group divided by the standard deviation and the SAT z-score equals the SAT score minus the SAT mean for that group divided by the standard deviation. This was done because most students took either the SAT exam or the ACT exam, but not both. The recalculation into a single z-score for each participant allowed the researcher to objectively compare these results. Participants also reported their average athletic training and science course grades ( $M = 1.70$ ,  $SD = .68$ ). The grades were coded as follows: 1 = A, 2 = B, 3 = C, 4 = D, 5 = F.

#### Summary of Findings and Conclusions

The four research questions were evaluated by analyzing the participants' responses to the *Athletic Training Student Persistence Survey* in which students indicated their level of satisfaction with various aspects of the athletic training education program by using a 5-point Likert scale from 5 (strongly agree) to 1 (strongly disagree). The survey assessed the students' satisfaction with four major supported constructs: Intellectual Integration, Academic Advising, Social Integration, and Commitment.

#### *Student Satisfaction and the Decision to Apply to the ATEP*

The mean scores for Social Integration ( $M = 4.068$ ) and Commitment ( $M = 4.064$ ) were very similar. There were significant differences between the groups for both variables which were related to the construct, Social Integration. The students who applied for admission were

more satisfied with their close personal relationships with other athletic training students and the ease in which they made these bonds than students who chose not to apply for admission. These findings are consistent with Bean's (1985) study which indicated that socialization variables had the largest impact on freshman and sophomore retention. Bean also found that Intellectual Integration and Commitment had a large effect on retention of students of all levels. In addition, he noted that Social Integration was vitally important to student retention. He emphasized that student relationships within the school improved retention while strong relationships outside of the school tended to decrease retention. Student friendships off campus seemed to detract from the building of relationships on campus. Other researchers had similar findings. Zhang and RiCharde (1998) studied freshmen retention and found that a lack of peer support significantly impacted the students' satisfaction with their educational experience and their resultant withdrawal from the university. Gerdes and Mallinckrodt's 1994 study also demonstrated that Social Integration is an important predictor of retention.

Students reported being most satisfied with their Academic Advising ( $M = 4.325$ ) and least satisfied with their Intellectual Integration ( $M = 3.963$ ). Several studies have demonstrated that academic difficulties and Intellectual Integration have a significant impact on retention rates (Billson & Terry, 1987; Blume & Krefetz, 1997; Laudicina, 1997; Sherrod et al., 1992). Laudicina also found that more attrition occurred during the early didactic portion of the student's education than during the later clinical portion. This is very similar to the typical athletic training program in which the freshman year is spent mostly in the classroom with little clinical education. As the student progresses through the program, the amount of clinical education increases dramatically (Miller & Berry, 2002; Weidner & Henning, 2002).

The lowest mean reported was for the overall students' satisfaction with their clinical education observation experiences being challenging with a mean of  $M = 3.421$  ( $SD = .963$ ). This finding is supported by Miller and Berry's (2002) study which found that students spend the majority of their clinical experience unengaged and that novice students spend significantly less time engaged than upperclassmen. This finding is also consistent with the findings noted by Weidner and Henning (2002) in their review of the medical and allied health profession literature related to clinical education. They found that students reported feeling like indentured servants rather than receiving focused clinical instruction.

Pearson product-moment correlation coefficients were calculated for each of the supported constructs and the student's decision to apply to the athletic training program. The results are displayed in Table 4. The analysis indicated that students who were more satisfied with their Intellectual Integration were more likely to apply for admission to the athletic training program. The discriminant analysis also demonstrated significant differences between the two groups for all three of the individual variables that were related to Intellectual Integration. Students who applied for admission were more satisfied with their academic performance, their athletic training course of study, and their overall athletic training academic experience than students who did not apply for admission. This finding is consistent with the study by Douce and Coates (1984) which examined the causes of attrition of respiratory therapy students as reported by their program directors. The results demonstrated that poor academic performance was the most common cause of attrition. Other research indicated that overall academic satisfaction was the most important variable in predicting overall satisfaction with the students' college experience (Sanders, Burton, & Chan, 1994).

Students who were more committed to their program were also more likely to apply to the athletic training program. Commitment was found to be the overall strongest predictor of persistence. The other two constructs, Academic Advising and Social Integration, did not significantly correlate with the decision to apply.

The discriminant analysis demonstrated that many individual variables differed significantly between the two groups, those who chose to apply and those who did not apply to the athletic training education program. Overall, the students who chose to apply were more satisfied with the various aspects of the program than those who did not apply. The complete results are located in Table 6. There were significant differences between the two groups for all three of the individual variables that were related to the construct, Intellectual Integration. Students who applied for admission were more satisfied with their academic performance, course of study, and academic experience than those students who did not apply for admission.

Students who applied for admission were also more satisfied with their clinical education being interesting than students who chose not to apply for admission. Because clinical education comprises such a substantial portion of the students' professional preparation, this finding is not surprising (Weidner & Henning, 2002). Additionally, students who applied for admission were more satisfied than those who did not apply with the ease in which they made friends with other athletic training students. This finding is in conflict with Laudicina's (1997) finding that having difficulty adapting socially with peers had very little impact on attrition. However, it should be noted that Laudicina's study assessed the opinions of program directors while this study assessed the opinions of students. It is possible that program directors are unaware of the social difficulties that their students are having and may also be unaware that this can significantly impact retention.

All six variables that were related to the construct, Commitment, were significantly different between the two groups. These variables, overall, showed some of the largest differences. Students who applied for admission were more confident that they chose the right athletic training program, reported that it was important to graduate from the ATEP, felt more strongly that they belonged in the ATEP, believed that their education would help them to secure future employment and/or admission to graduate school, felt that it was important to get a college degree in athletic training, and reported that it was important to finish their degree in athletic training than those who chose not to apply. These findings are consistent with Laudicina's 1997 study which found that the following three reasons for program incompleteness were ranked fairly high: uncertain about career goals, lack sufficient knowledge of profession, and unrealistic expectations of profession. Zhang and RiCharde (1998) also noted that a lack of personal Commitment to their college education significantly affected retention in freshmen students.

Several variables that did not relate to any of the four constructs were also found to differ significantly between the two groups. Students who applied for admission rated the following variables higher than students who chose not to apply: close friends rating the athletic training program as a quality program, likeliness of continuing in the athletic training program the following fall, and meeting the minimum requirements to apply to the program.

There were also significant differences between groups for all of the summary variables which asked respondents what impact each area had on their decision to apply for admission. Again, the students who applied for admission were more satisfied with their overall academic experience, Academic Advising, clinical education observation experience, and relationships with other athletic training students.

*Demographics and the Decision to Apply to the ATEP*

Pearson product-moment correlation coefficients were calculated for each of the demographic variables and the decision of the student to apply to the athletic training program. The results are displayed in Table 5. None of the demographic variables significantly correlated with the decision of the student to apply to the athletic training program. However, the discriminant analysis did demonstrate that students who applied to the program had higher college cumulative GPAs and higher average grades in their athletic training and science Courses than students who did not apply.

The findings related to most of the demographic variables are consistent with Hedl's 1987 study of undergraduate allied health students which found that none of the demographic variables impacted retention. Those findings are also consistent with McGrath and Braunstein's 1997 study of freshmen across all majors which demonstrated that demographic variables do not appear to impact retention rates. However, a meta-analysis by Campbell and Dickson (1996) of nursing education found that age, ACT scores, & HS GPA were significant predictors of retention.

The findings which noted differences for college grades are consistent with the findings of other researchers. Hedl (1987) found similar results in his study of attrition in respiratory therapy education in which he reviewed academic records and departmental files. The average GPA of graduates (3.42) was significantly higher than the GPA of the dropouts (2.91). Several other studies also concluded that the freshman year GPA is a significant indicator of retention (McGrath & Braunstein, 1997; Pantages & Creedon, 1978; Sanders, Burton, & Chan, 1994).

Significant correlations were noted between gender and race with certain other demographic variables. Females earned higher overall GPAs than males in both college and

high school. Minority students had lower high school and college GPAs, lower SAT and ACT scores, and lower average grades in athletic training and science Courses. Gupta (1991) found similar trends in regards to attrition in her study of allied health education programs. The study reviewed attrition data which had been collected by the Committee on Allied Health Education and Accreditation (CAHEA) and the American Medical Association (AMA). She noted that attrition was higher for men than for women and higher for minorities than for Caucasian students.

*School size and the Decision to Apply to the ATEP*

The size of the school's athletic program was not found to be a predictor of retention. This suggests that students who are at large universities with NCAA Division I athletics are equally as apt to apply for admission as students who attend smaller universities with NCAA Division II, III, or NAIA athletic programs. This finding conflicts with the current literature which indicates that smaller, private schools have higher retention rates than larger, public schools (ACT, 2003). Freshmen at Division I programs may be "star-struck" by the excitement of elite athletic programs. They are given the opportunity to work in superior facilities with some of the finest athletes in the nation. Most students also have nothing to compare their clinical education experience with unless they were very active in athletic training in high school.

Based on the findings presented, it can be concluded that:

1. The null hypothesis that students are equally satisfied with all of the constructs (Intellectual Integration, Social Integration, Academic Advising, Program Commitment, Goal Commitment, Intent to Persist, and clinical education in ATEPs) is rejected.
2. The null hypothesis that there is no relationship between the satisfaction with each of the

constructs and an athletic training student's decision to apply to an athletic training program at the end of his/her freshman year is rejected.

3. The null hypothesis that there is no relationship between any of the following demographic variables (age, gender, race, size of the athletic program, high school GPA, college GPA, SAT scores, ACT scores, and average grades in athletic training and science Courses) and an athletic training student's decision to apply to an athletic training program at the end of his/her freshman year is rejected.
4. The null hypothesis that there is no relationship between the size of the school's athletic program (NCAA Div. I, II, III, or NAIA) and the decision to apply to the ATEP by freshmen is accepted.

### Ancillary Findings

Several relationships were found between the supported constructs. Students who were socially integrated also tended to be committed. Students who were satisfied with their Academic Advising were also more satisfied with their Intellectual Integration. This finding is supported by existing research which indicates that an important facet of Intellectual Integration is faculty-student interactions. Advising is a strong positive first step in the initiation of these interactions (Hedl, 1987). Students who were intellectually integrated and/or satisfied with their Academic Advising also tended to be more committed. This finding is consistent with the research by Thurber, Hollingsworth, Brown, and Whitaker (1989) who noted that advisors who are committed to their students can positively influence retention rates. Other researchers also noted that positive student-faculty interactions were cited by students as contributing to their success and persistence (Sherrod et al., 1992).

Intellectual Integration also correlated with two demographic variables. Students with higher ACT and SAT scores, and/or higher high school GPAs tended to be more intellectually integrated. These students were probably more academically prepared than their peers and, thus, felt less intimidated and overwhelmed by the rigors of college academics (Thomas, 2002).

The discriminant analysis demonstrated that certain individual variables were found to differ significantly between the two groups, those who applied and those who did not apply to the athletic training education program. The complete results are located in Table 6. Several variables that did not relate to any of the four constructs were found to differ significantly between the two groups. Students who applied for admission reported that their close friends rated their ATEP as a quality program than students who chose not to apply. The survey item asked students to agree or disagree with the statement “My friends rate this athletic training

program as a quality program.” This variable was shown to significantly correlate with all four of the supported constructs: Social Integration, Intellectual Integration, Academic Advising, and Commitment. This indicated that students whose friends rated the program highly, rated the program highly themselves. Athletic training program directors could impact retention by improving the visibility of the program on campus by such means as displaying student research, formally announcing award winners, and highlighting the achievements and community involvements of the program.

As was expected, students who applied indicated that they were more likely to continue on in the fall. Bean (1983, 1985) noted that by assessing the students’ behavioral intentions to stay or leave, or the *Intent to Persist*, one can confidently predict persistence in most cases.

Students who applied for admission were also more likely to have met the minimum admission requirements. Almost 70% of the students reported that they did meet the minimum requirements while only 8.6% reported that they did not. A somewhat troubling finding was that almost 20% of the students reported that they were not sure if they had met the minimum admission requirements. It appears that a large number of students in ATEPs are unaware of the minimum requirements for program admission, which may decrease their ability to meet such requirements. Laudicina (1997) found that being insufficiently informed about the program demands resulted in higher rates of attrition in clinical laboratory science and clinical laboratory technician programs.

There were also significant differences between groups for all of the summary variables which asked respondents what impact each area had on their decision to apply for admission. Students who applied for admission were more satisfied overall with their academic experience,

their Academic Advising, their clinical education observation experience, and their relationships with other athletic training students than students who chose not to apply.

Several other relationships emerged through data analysis. The more interesting and challenging students found their clinical observation experiences, the higher they rated their clinical instructors. This indicates that even freshman level students want to learn and be challenged in their clinical rotations. Students who were satisfied with their clinical education experience also felt socially integrated as well. The clinical education experience is often a relaxed, informal setting where students have the opportunity to become better acquainted with their peers, upperclass students, and clinical faculty (Miller & Berry, 2002).

#### Implications

One of the most crucial aspects of program and overall higher education institutional management is the allocation of resources. Government funding of higher education may even soon hinge on retention statistics (Swail, 2004). Because student retention is a central indicator of success, it is vital to the university to deploy funding for retention strategies (McLaughlin, Brozovsky, & McLaughlin, 1998). Universities which allocate significant funds towards improving retention are making a wise investment in the long-term strength of their program and school (Reed & Hudepohl, 1985; Starks, 1997; Swail, 2004). However, these retention strategies must be based on hard data to support them (Billson & Terry, 1987; Hamrick, Schuh, & Shelley, 2004; McGrath & Braunstein, 1997; Sanders, Burton, & Chan, 1994). This study provides data for athletic training education program directors and other administrators which can be used to develop relevant retention programs.

The results suggest the need for higher education administrators to focus on variables which are highly predictive of students' intent to re-enroll as the target variables to address

intervention strategies. Intervention strategies need to address those variables which can be manipulated and which have been found to be the strongest predictors of attrition (Billson & Terry, 1987; Cabrera, Nora, & Castaneda, 1993). These retention programs should have a significant focus on the freshman year (McGrath & Braunstein, 1997; Pantages & Creedon, 1978; Sanders, Burton, & Chan, 1994). Research has demonstrated that identifying high-risk students and counseling them during their freshman year can significantly reduce attrition (Gerdes & Mallinckrodt, 1994; Rickinson & Rutherford, 1995; Starks, 1997).

One such intervention strategy should address Social Integration. While administrators cannot force students to befriend one another, they can certainly create additional opportunities for bonds to form. Program directors of ATEPs should consider expanding their freshmen orientation to include more activities that allow students to become acquainted with one another (Billson & Terry, 1987; Courage & Godbey, 1992; Drew, 1990; McGrath & Braunstein, 1997; Gerdes & Mallinckrodt, 1994; Sanders, Burton, & Chan, 1994). Creative situations such as team building activities and group work could also be interspersed throughout the year to foster these relationships (Sherrod et al., 1992; Thomas, 2002). Pairing up freshmen with upperclassmen as mentors could facilitate students becoming socially connected to other students within the program (Billson & Terry, 1987; Courage & Godbey, 1992).

Program directors also need to evaluate their clinical education component, especially the freshman experience. Clinical education should be both interesting and challenging, even to freshman level students (Weidner & Henning, 2002). Students should be engaged by their clinical instructors for as much time as possible during the clinical observations (Miller & Berry, 2002).

Freshmen students need to be repeatedly made aware of the admissions standards of the program. While many would overlook this as being the student's responsibility, faculty must remember that students are often overwhelmed with the amount of information provided to them during the freshman year. Students are less likely to meet the admission requirements, and therefore, persist in the program, if they are unsure of what the program requirements are (Laudicina, 1997).

By developing strategies to retain freshmen students, athletic training education program directors may be able to increase the overall academic quality of its students and graduates. Programs that retain a larger number of freshmen students will eventually be able to increase admission requirements. Through increased admissions standards and enhanced retention, the ATEP has the potential to improve the quality of athletic trainers practicing in the field by attracting and retaining stronger students.

### Recommendations

The following recommendations have emerged through a careful analysis of the data and findings of this study.

1. These findings can only be generalized to those ATEPs in which the students' first opportunity to apply to the program is during the spring of their freshman year. Many programs admit students as incoming freshmen or do not allow them to apply until later in their sophomore year. Generalizability could be improved by expanding the study to include students in programs with variable application deadlines.

2. Although students were offered an opportunity to express their views in one qualitative question, this could be expanded. Informal exit interviews with students could provide information not otherwise gleaned through the use of the survey tool utilized in this study.
3. The survey could be expanded to examine the influence of institutional factors which impact the student's decision to apply such as financial aid, parental support, and support services offered by the university. It could then be determined if student retention is related more to program or institutional issues.
4. A longitudinal study could also offer more information regarding how the issues affecting retention change throughout a student's higher education. It would also be able to include those students who left the program prior to the application deadline.
5. Because students showed the lowest levels of satisfaction with their Social Integration and clinical education, future research should examine these variables in more detail.

Student attrition negatively impacts the prestige and financial strength of universities and their academic divisions (Gupta, 1991). It is the responsibility of the athletic training program director and school administrators to enable each student to succeed. Early intervention programs can be used to target students who are at high risk of dropping out (Sanders, Burton, & Chan, 1994). Enriched by an evidence-based and coordinated retention program, the freshman experience can be a stimulating and fulfilling transition into college life as an athletic training student.

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References marked with an asterisk indicate studies included in the meta-analysis.

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APPENDIX A

Athletic Training Student Persistence Survey

## Athletic Training Student Persistence Survey

**Please circle the most appropriate response.**

	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
1. In my athletic training courses, I have performed academically as well as I anticipated I would.	1	2	3	4	5
2. Overall, I am satisfied with my athletic training course of study.	1	2	3	4	5
3. I am satisfied with my athletic training academic experience.	1	2	3	4	5
4. My athletic training academic advisor is receptive to my needs and concerns.	1	2	3	4	5
5. My athletic training academic advisor is available to answer my questions.	1	2	3	4	5
6. My athletic training clinical observation experiences have been interesting.	1	2	3	4	5
7. My athletic training clinical observation experiences have been challenging.	1	2	3	4	5
8. I am satisfied with the quality of my athletic training clinical instructors.	1	2	3	4	5
9. Since coming to this school, I have developed close personal relationships with other athletic training students.	1	2	3	4	5
10. It has been easy for me to meet and make friends with other athletic training students at my school.	1	2	3	4	5
11. I am confident that I have made the right decision in choosing this athletic training program.	1	2	3	4	5
12. It is very important for me to graduate from this athletic training program as opposed to some other program or school.	1	2	3	4	5
13. I feel I belong in this athletic training program.	1	2	3	4	5
14. My education in this athletic training program will help me secure future employment and/or admission to graduate school.	1	2	3	4	5
15. My close friends rate this athletic training program as a quality program.	1	2	3	4	5
16. It is important for me to get a college degree in athletic training.	1	2	3	4	5
17. It is important for me to finish my athletic training program of study.	1	2	3	4	5
18. It is likely that I will continue in this athletic training program next fall.	1	2	3	4	5

	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
19. Overall, my satisfaction with my academic experience influenced my decision to apply to the athletic training education program.	1	2	3	4	5
20. Overall, my satisfaction with the academic advising I received influenced my decision to apply to the athletic training program.	1	2	3	4	5
21. Overall, my satisfaction with my clinical education observation experience influenced my decision to apply to the athletic training program.	1	2	3	4	5
22. Overall, my satisfaction with my relationships with other athletic training students influenced my decision to apply to the athletic training program.	1	2	3	4	5
23. Other factors influenced my decision to apply to the athletic training program. Please explain: _____ _____	1	2	3	4	5

24. I have applied for formal admission into the athletic training education program. Yes or No

25. I met the minimum requirements to apply to the athletic training education program. Yes or No or Not Sure

**Please answer the following questions as accurately as possible.**

26. My cumulative grade point average (GPA) at this college is \_\_\_\_\_.

27. My high school cumulative GPA was \_\_\_\_\_ out of \_\_\_\_\_ (4.0, 4.5 etc).

28. The highest SAT score I received was \_\_\_\_\_. Did not take SAT \_\_\_\_\_

29. The highest ACT score I received was \_\_\_\_\_. Did not take ACT \_\_\_\_\_

30. In my athletic training and science courses, my grades are mostly: A's \_\_\_\_ B's \_\_\_\_ C's \_\_\_\_ D's \_\_\_\_ F's \_\_\_\_

31. Most sports teams at this school are: NCAA Div. I \_\_\_\_\_ NCAA Div. II \_\_\_\_\_ NCAA Div. III \_\_\_\_\_ NAIA \_\_\_\_\_

32. Age: \_\_\_\_\_

33. Sex: Male \_\_\_\_\_ Female \_\_\_\_\_

34. Race: Caucasian \_\_\_\_\_ Hispanic \_\_\_\_\_  
African-American \_\_\_\_\_ Asian American \_\_\_\_\_  
Native American \_\_\_\_\_ Other (please specify) \_\_\_\_\_

Thank you for taking the time to participate in this survey research!

APPENDIX B

Cover Letter for Program Directors

April 1, 2004

Dear Athletic Training Education Program Director:

Please accept this invitation to participate in an important study. The purpose of this research is to analyze the factors which influence freshman retention in undergraduate athletic training education programs that are currently accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). I am currently advising a doctoral student at Marshall University, Valerie Herzog, MEd, ATC, and we will use these data to complete her dissertation. This project has been approved by Marshall University's Institutional Review Board.

Your participation is vital to the success of this study, and is entirely voluntary. If you do not wish to participate, simply discard the questionnaires. Your freshmen students have a right to not respond to every question. They have the right to withdraw from this study at any time without penalty. All individual responses will be kept anonymous and confidential to the extent the law and institutional policy allows. It should take only 5-10 minutes to complete the survey.

The envelope marked "Freshmen" contains multiple copies of a short survey for your freshmen to complete, *after the application deadline for your program has passed*. Only second semester freshmen (at least 18 years of age) who have completed less than 30 credit hours should complete the survey. Approximately 2,000 freshmen students will participate in this study. Please distribute these to the freshmen during class. Students must read their consent letter prior to completing the survey. Have them place their completed surveys in the self-addressed stamped envelope that I have provided. You or one of your faculty members should then mail the surveys immediately after they have been completed.

Keep this letter for your records. Please return all materials by **within 2 weeks**. Feel free to contact me directly if you have any questions or concerns about the risks or benefits associated with your responses at (304) 746-8989 or [dprisk@marshall.edu](mailto:dprisk@marshall.edu) or Valerie Herzog, MEd, ATC at (304)744-7552 or [vherzog@charter.net](mailto:vherzog@charter.net). Should you wish to receive a copy of the results of this study, please contact me directly by phone, postal mail, or e-mail. If you have any questions regarding your students' rights as participants in this research study, please contact Dr. Stephen Cooper, Chair for Marshall University's IRB#2, (304) 696-7320. Thank you again for your participation!

Sincerely,

Dr. Dennis P. Prisk  
Distinguished Professor  
Marshall University  
4 Oak Ridge Drive  
Winfield, WV 25213

APPENDIX C

Cover Letter for Students

April 1, 2004

Dear Freshman Athletic Training Student:

Please accept this invitation to participate in an important study. The purpose of my research is to analyze the factors which affect freshman retention in undergraduate athletic training education programs currently accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). I am currently advising a doctoral student at Marshall University, Valerie Herzog, MEd, ATC, and we will use these data to complete her dissertation. This project has been approved by Marshall University's Institutional Review Board.

Your participation is vital to the success of this study, and is entirely voluntary. If you do not wish to participate, simply discard the questionnaire. You have a right to not respond to every question. You have the right to withdraw from this study at any time without penalty. All individual responses will be kept anonymous and confidential to the extent the law and institutional policy allows. Completing and returning the questionnaire constitutes your consent to participate. It should take only 5-10 minutes to complete the survey.

**Please only complete this survey if you are at least 18 years old at this time.** Approximately 2,000 freshmen students will participate in this study. Please complete your survey and place it the self-addressed stamped envelope that I have provided to your Program Director. Your professor will mail the surveys after every student has completed it.

Keep this letter for your records. I am asking your Program Director to return all materials **within 2 weeks** . Feel free to contact me directly if you have any questions or concerns about the risks or benefits associated with your responses at (304)746-8989 or [dprisk@marshall.edu](mailto:dprisk@marshall.edu) or Valerie Herzog, MEd, ATC at (304)744-7552 or [yherzog@charter.net](mailto:yherzog@charter.net).

If you have any questions regarding your rights as a participant in this research study, please contact Dr. Stephen Cooper, Chair for Marshall University's IRB#2, (304) 696-7320.

Thank you again for your participation!

Sincerely,

Dr. Dennis P. Prisk  
Distinguished Professor  
Marshall University  
4 Oak Ridge Drive  
Winfield, WV 25213

APPENDIX D

Approval Letter from the Marshall University

Institutional Review Board



Office of Research Integrity  
Institutional Review Board

Wednesday, March 10, 2004

Dennis Prisk

RE: IRB Study # EX04-0022 At: Marshall IRB 2

Dear Dr. Prisk:

Protocol Title:

Effect of Student Satisfaction on Freshmen Retention in Undergraduate Athletic Training Education

This letter is to acknowledge the receipt of the information identified below.

Expiration Date: 3/9/2005

Our Internal #: 539

Type of Change: (Other) Exempted

Expedited?:

Date of Change: 3/17/2004

Date Received: 3/17/2004

On Meeting Date:

Description: The above study for student Valerie Herzog has been granted exempt status in accordance with 45 CFR 46.101, for the period of 12 months. A progress report of the study will be due prior to the anniversary date of 03/10/05 or upon completion of the study.

Respectfully yours,

A handwritten signature in black ink, appearing to read 'Stephen Cooper'.

Stephen Cooper, Ph.D.  
IRB #2 Chalman

APPENDIX E

Means and Standard Deviations for Each Survey Question

## Means and Standard Deviations for Each Survey Question

Have applied for admission		Mean	Std. Deviation
yes	Academic Performance	3.834	0.972
	Course of Study	4.221	0.743
	Academic Experience	4.166	0.758
	Academic Advisor - needs & concerns	4.290	0.841
	Academic Advisor - availability	4.392	0.798
	Clinical Observation - interesting	4.198	0.715
	Clinical Observation - challenging	3.470	0.962
	Clinical Instructor quality	4.267	0.722
	Made friends with ATS	4.184	0.894
	Easy to meet & make ATS friends	4.203	0.797
	Chose the right ATEP	4.300	0.838
	Important to graduate from this ATEP	4.276	0.864
	Belonging in the ATEP	4.300	0.774
	Future employment or grad school	4.401	0.701
	Close friends rate as quality ATEP	3.991	0.788
	College degree in AT	4.387	0.725
	Finish ATEP	4.502	0.681
	Likely to continue next fall	4.502	0.812
	Satisfaction with academic experience	3.908	0.834
	Satisfaction with Academic Advising	3.654	1.012
	Satisfaction with clinical education	4.009	0.833
	Satisfaction with ATS relationships	3.843	0.925
	Met minimum requirements	1.336	0.722
	College cumulative GPA	3.097	0.517
	High School GPA	3.476	0.434
	AT and science course grades	1.654	0.691
	Age	19.018	0.976
	Gender	1.691	0.463
	Sport Division	1.627	0.485
	Race recoded	1.120	0.325

Have applied for admission		Mean	Std. Deviation
no	Academic Performance	3.559	0.904
	Course of Study	3.676	0.888
	Academic Experience	3.765	0.813
	Academic Advisor - needs & concerns	4.235	0.900
	Academic Advisor - availability	4.294	0.774
	Clinical Observation - interesting	3.735	1.002
	Clinical Observation - challenging	3.265	0.956
	Clinical Instructor quality	4.088	0.685
	Made friends with ATS	3.691	1.096
	Easy to meet & make ATS friends	3.912	0.973
	Chose the right ATEP	3.088	1.075
	Important to graduate from this ATEP	2.971	1.293
	Belonging in the ATEP	2.868	1.208
	Future employment or grad school	3.353	1.169
	Close friends rate as quality ATEP	3.662	0.784
	College degree in AT	3.015	1.287
	Finish ATEP	3.074	1.375
	Likely to continue next fall	2.676	1.540
	Satisfaction with academic experience	2.882	1.015
	Satisfaction with Academic Advising	2.853	0.902
	Satisfaction with clinical education	2.897	1.067
	Satisfaction with ATS relationships	2.824	0.929
	Met minimum requirements	1.853	0.885
	College cumulative GPA	2.902	0.728
	High School GPA	3.385	0.455
	AT and science course grades	1.868	0.710
	Age	19.265	1.681
	Gender	1.632	0.486
	Sport Division	1.544	0.502
	Race recoded	1.103	0.306

Freshman Retention 115

Have applied for admission		Mean	Std. Deviation
Total	Academic Performance	3.768	0.962
	Course of Study	4.091	0.813
	Academic Experience	4.070	0.789
	Academic Advisor - needs & concerns	4.277	0.854
	Academic Advisor - availability	4.368	0.792
	Clinical Observation - interesting	4.088	0.815
	Clinical Observation - challenging	3.421	0.963
	Clinical Instructor quality	4.225	0.716
	Made friends with ATS	4.067	0.967
	Easy to meet & make ATS friends	4.133	0.849
	Chose the right ATEP	4.011	1.036
	Important to graduate from this ATEP	3.965	1.128
	Belonging in the ATEP	3.958	1.084
	Future employment or grad school	4.151	0.947
	Close friends rate as quality ATEP	3.912	0.798
	College degree in AT	4.060	1.065
	Finish ATEP	4.161	1.082
	Likely to continue next fall	4.067	1.292
	Satisfaction with academic experience	3.663	0.982
	Satisfaction with Academic Advising	3.463	1.043
	Satisfaction with clinical education	3.744	1.011
	Satisfaction with ATS relationships	3.600	1.022
	Met minimum requirements	1.460	0.793
	College cumulative GPA	3.050	0.579
	High School GPA	3.454	0.440
	AT and science course grades	1.705	0.700
	Age	19.077	1.184
	Gender	1.677	0.468
	Sport Division	1.607	0.489
	Race recoded	1.116	0.321