

THE DEVELOPMENT AND INTEGRATION OF COGNITIVE AND CLINICAL SKILLS IN
UNDERGRADUATE ATHLETIC TRAINING EDUCATION PROGRAMS: A SURVEY OF
RECENTLY CERTIFIED ATHLETIC TRAINERS

By

Brian Anthony Bratta

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ABSTRACT

THE DEVELOPMENT AND INTEGRATION OF COGNITIVE AND CLINICAL SKILLS IN UNDERGRADUATE ATHLETIC TRAINING EDUCATION PROGRAMS: A SURVEY OF RECENTLY CERTIFIED ATHLETIC

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Athletic training education began as an apprenticeship program in which students took a base level of classes while gaining a large portion of their training in the clinical setting. Current education standards have evolved into a full academic curriculum governed by an accrediting body. The increase in curriculum initiated recognition of athletic training as an allied health profession as well as creating a base level of knowledge for all athletic training students prior to sitting for the national certification exam. With this progression, an increase in textbook knowledge is expected, as a result skills are being overlooked that were developed during the field experiences of the apprenticeship, skills such as interpersonal relations and professional development.

The purpose of this study was to examine the perceptions of newly certified athletic trainers (ATs) regarding the development and integration of skills in their athletic training education program. Specifically, the instruction of clinical skills, interpersonal skills and professional personal development based on the Commission on Accreditation of Athletic Training Education (CAATE) standards. Along with determining the level of development and integration, determination of the level of importance of the classroom, laboratory and field settings was also identified.

Individuals that were members of the National Athletic Trainers' Association (NATA) and had successfully completed their national certification exam within the previous 18 months received an e-mail invitation to complete an online survey. One hundred fifty-four respondents (8.65% response rate) completed the survey with an average certification time of 11.68 months. The primary employment setting with the highest frequency rate (36.4%) was collegiate- NCAA division, while the second highest frequency (22.1%) was the High School setting.

"In the classroom" had the highest frequency of responses for general CAATE skills (52.9%), interpersonal skills (49.3%) and professional personal development (44.8%) for area of development and integration of skills. Respondents identified the field as the highest level of importance followed by the classroom and the laboratory setting for all of the three categories. Utilizing a Pearson correlation test, there was no statistically significant difference between class size of athletic training education program and level of development and integration in each of the three categories. There was also no association between collegiate division of competition and perceived level of development and integration of skills among respondents.

According to the data compiled in this research, the majority of the respondents for each of the three categories identified "In the classroom" as the main area for development and integration of skills in their athletic training education. When differentiating between the classroom, laboratory and field settings, respondents placed a high level of importance on the field setting above the classroom and laboratory settings.

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Chapter 1

Introduction

1.1 Overview of the problem

According to the United States Bureau of Labor Statistics (www.bls.gov), the field of athletic training has evolved over the past 60 years into an allied health field that is not only recognized by the American Medical Association (AMA), but is also considered to be a field that is growing “faster than average.” The increase in the number of accredited athletic training education programs through the Commission on Accrediting Athletic Training Education (CAATE) nationwide has produced an increase in certified athletic trainers (ATs) in a variety of different work settings. These programs are teaching students in-depth information about the foundations of medicine to aid in the prevention, evaluation, treatment and rehabilitation of patients. In the early phases of athletic training education, the curriculum included a hybrid of pre-requisites from the life sciences, pre-physical therapy program and classes that prepared students for a secondary teaching job, most commonly physical education (NATA.org, 2012). Current trends in athletic training education introduce a stronger medical training through clinical-based curricula that promotes learning over time and through evidence based laboratory training (Turocy, 2000). Evidence based clinical education gives the student an opportunity to learn skills by physically performing the task at hand while having appropriate supervision by a preceptor. When the athletic training student is faced with an emergency for which the skills have been practiced, a higher level of confidence is seen when performing the necessary tasks to help the patient (Heinrichs, 2002).

In order to become an AT, a student must complete an athletic training education curriculum approved by CAATE and successfully complete an exam that is regulated by the Board of Certification (BOC) for athletic training. In the early phases of the certification process, this exam consisted of two sections: the written scientific foundations and the practical application. The written scientific foundations tested the base knowledge a candidate had in the different disciplines of athletic training including human physiology, anatomy and exercise physiology as well as medical competency. The practical application section involved a physical manipulation of a human model by the person completing the exam in order to perform orthopedic assessments, muscle testing as well as identifying pertinent landmarks on the body. Over time, the certification process introduced a written simulation section. This included a step-by-step evaluation and treatment of a situation in which an injured athlete required attention (www.nata.org). The exam format has recently changed combining the scientific foundations, the practical applications and the written simulation section into a single, computer-based exam. The format of the current exam is similar to that of other medical certifications including some board examinations for physician licensing as well as physical therapy licensing (AMA.org; APTA.org).

The current CAATE curriculum standards and the testing procedures established by the BOC have led to an increase in the demand for direct supervision and mentorship of the athletic training student during their undergraduate education. Preceptors are required to remain in audible and visual contact with all athletic training students during any evaluation, treatment or rehabilitation of an athlete (CAATE.net). This gives the athletic training student the guidance required as well as reducing the liability of malpractice, and assists the athletic training student in reassurance of proper technique and care of the athlete.

1.2 Significance of the problem

The current standards for an athletic training education programs have been determined by the NATA Executive Council on Education (ECE) and governed by CAATE. They require specific clinical competencies to be completed in a learning over time environment. The student is taught the material in the lecture/classroom setting and is allowed to practice in the laboratory setting. The students then apply their knowledge in the appropriate time and manner when necessary in the real life setting. These activities are conducted under the direct supervision of a practicing AT known as a preceptor. Learning in this fashion allows the athletic training student an opportunity to gain confidence in performing the skills required in a laboratory scenario. While gaining experience with the preceptor, the athletic training student then can apply the techniques practiced from the laboratory scenario to real world situations.

With the incorporation of direct supervision of athletic training students, the preceptor maintains a supervisory position over the student and completes many of the administrative duties of athletic training that the student may not be allowed to complete. These activities include AT and coach interaction during return-to-play decision-making, as well as injury reports and activity rosters. The preceptor maintains leadership with explanation of injuries to the athlete as well as others associated with the athlete, i.e. parents, significant others, media. While the athletic training student witnesses these occurrences, he or she is not placed directly into the situation. This allows observation of the experience and possible challenges without direct consequences. Understandably, this is an experience that is facilitated more thoroughly when the student becomes certified and is practicing independently.

A question that arises with the newest CAATE standards centers on whether the athletic training students receive the appropriate amount of guidance and preparation in their education

to be prepared for real world experiences as an independent AT. CAATE standards do not allow the athletic training student to spend time in their athletic training experiences beyond what the federal work-study guidelines allow (CAATE.net). Is this a true sense of the responsibilities a practicing AT incurs when working directly with a collegiate or professional team? Along with this idea, does the direct supervision by a preceptor allow an athletic training student enough experience to be able to respond appropriately in emergencies? This also can include being able to discuss injuries and return to play with parents, athletes and coaches.

Research within the athletic training profession shows more ATs are experiencing burnout (Hendrix, 2000; Reed, 2004) as well as an increase in work and family conflict when practicing in the field (Mazerolle, 2008a, Mazerolle, 2008b). This can place pressures on the AT that they are unfamiliar with and cause responses that may place athletes' welfare in jeopardy. Do the current standards within the athletic training educations across the nation prepare AT students with the appropriate training to be able to cope with the demands of the profession?

1.3 Purpose of the Study

The purpose of this study is to examine the perceptions of newly certified athletic trainers (ATs) regarding the development and integration of their athletic training skills during their athletic training education program; specifically, the instruction of clinical, interpersonal and professional personal development skills as identified in the Commission on Accreditation of Athletic Training Education (CAATE) standards. Along with determining the level of development and integration of their skills, participants are asked to identify a level of importance of the classroom, laboratory and field settings in their educational growth.

1.4 Research Questions

In order for this study to examine the development and integration of specific athletic training skills during education, a set of research questions was compiled. These research questions take a look at the individual skills sets (General CAATE athletic training skills, interpersonal skills, and professional development skills), location and size of athletic training education programs and how they interact in the different environments. The complete list of research questions is listed below.

1. What are the perceptions of recently certified ATs regarding the development and integration of their preparation in:
 - a. General CAATE athletic training skills
 - b. Interpersonal Skills
 - c. Professional Personal Development Skills
2. Does graduating class size affect the perceived instruction in general CAATE skills?

3. Does level (e.g. NCAA division I-III or NAIA) of athletic program affect perceived instruction in general CAATE skills?
4. Do field experiences within the athletic training education of newly certified ATs play an important role in the instruction of general CAATE athletic training competencies?
5. Do field experiences within the athletic training education of newly certified ATs play an important role in the instruction of interpersonal skills within the field of athletic training?
6. Do field experiences within the athletic training education of newly certified ATs play an important role in the instruction of how to cope with the demands of the profession?

1.5 Operational definitions of terms

In order to fully understand this study, there are some common terms and definitions pertinent to the field of athletic training. These terms include common titles for different individuals that play a role in athletic training education as well as agencies that have oversight over the educational process of an athletic trainer.

Certified athletic trainer (AT) - Allied healthcare professional who specializes in the prevention, diagnosis, treatment and rehabilitation of medical conditions involving impairment, functional limitations, and disabilities in physically active populations (NATA, 2012).

Board of Certification (BOC) - A committee that establishes and reviews the standards of practice of athletic training for an AT (bocatc.org, 2013).

National Athletic Trainers' Association (NATA) – An association in which professional athletic trainers belong in order to interact and progress the profession (NATA, 2013).

Commission on Accrediting Athletic Training Education (CAATE) - An organization charged with the development, maintenance and promotion of the appropriate minimum education standards of athletic training education programs (CAATE, 2013).

Program Director - A person who is a full time employee of the institution holding full faculty status and having programmatic administrative rights and responsibilities. This person must be credentialed and in good standing with the Board of Certification (BOC) and hold a degree commensurate with similar faculty within the institution (CAATE, 2013).

Clinical Education Coordinator - A faculty member of the institution responsible for student clinical progression, clinical site evaluation, student evaluation, preceptor training, and preceptor evaluation. This person must be credentialed and in good standing with the BOC and must be allowed release time commensurate with the responsibilities given (CAATE, 2013).

Athletic Training Faculty - Faculty associated with the institution that instruct athletic training students in the acquisition and application of athletic training skills in the classroom or clinical experience (CAATE, 2013).

Medical Director - A licensed MD or DO who coordinates medical resources and content with the Program Director for the athletic training students within the athletic training education program (CAATE, 2013).

Preceptor - A clinical instructor who helps facilitate experiences with the athletic training students in the athletic training setting. Qualifications include being credentialed within the state and health care profession and practicing in a health care setting where an athletic training student can interact and gain experience (CAATE, 2013).

Chapter 2

Literature review

2.1 History of Athletic Training

The Greeks and Romans sponsored athletic events to honor their Gods. During these times, individuals were given the task of training and caring for the athletes to ensure adequate competition. These include the *aleiptes*, professionals known as "anointers" who massaged oils onto the body of the athlete to ensure optimal muscle health. The *paidotribes* were people that specialized in physical training; including strengthening and maximizing the agility of the athlete, and the *gymnastes*, highly sought after individuals for their specialized sport training (Ablemedia.com). The idea of performing interventions on their athletes to achieve optimal performance can be seen as the earliest form of sports medicine in history. Since that time, with the help of science and technology, the field of athletic training has evolved into a recognized allied health field. Prior to the specialization of athletic trainers, a member of the coaching staff or a local volunteer physician provided many of the athlete's medical needs.

The modern athletic trainer, initiated in the 1930s by the United States Olympic Committee (USOC), developed skills initially through on the job training and from techniques shared from other professionals with medical experience. The USOC began sending trained medical professionals, later known as athletic trainers, with their teams to care for the athletes. These professionals shared techniques and knowledge through workshops and seminars hosted by the USOC. In 1938, during the Drake Relays track event at the University of Iowa, the first National Athletic Trainers' Association (NATA) was formed by individuals recognizing

themselves as practicing athletic trainers in the realm of athletics. At this time, the NATA agreed to convene twice a year at the Drake Relays in Iowa City, IA and the Penn Relays held at the University of Pennsylvania in Philadelphia, PA. This continued until the beginning of World War II when a large portion of the athletic trainers enlisted and utilized their skills to aid men in battle. Unfortunately, shortly after in 1944, the NATA became bankrupt and was no longer in existence (Ebel, 1999).

Although many regional groups of athletic trainers maintained contact with one another and held small conventions, the NATA did not re-established itself until 1950. During this time, many athletic trainers practiced in different environments, and had no recognized formal education or certification process in place nationwide. William E. Newell, the first man appointed as the National Secretary of the NATA in 1955 and later the Executive Director, along with the appointment of a Committee on Gaining Recognition convened to develop the basic skills and educational needs of individuals wishing to become athletic trainers (Delforge, 1999). Over time, this committee became the Professional Education Committee and the first to oversee the initial athletic training curricula in universities. In 1956, the Committee on Gaining Recognition was charged with its first order of business, the professionalization of athletic training through a national certification process, later approved by the NATA board of directors in 1959 (Schwank, 1971). This included the basic standards required for becoming an athletic trainer including educational standards in the classroom as well as in the field prior to sitting for the exam.

The curriculum model proposed in 1959 had two basic tenets to support an individual becoming an athletic trainer. First, the required classes would be aligned with the prerequisites for physical therapy school. Other than a few specific classes, most universities already offered

these classes and therefore the model did not require a significant change within the participating institutions. This was an easy step for adding athletic training into the curriculum, but did not differentiate the profession from physical therapy. The second emphasis was to fulfill the requirements for secondary school teaching certification. Prior to becoming an athletic trainer, the student needed to complete the specific university requirements for a teaching certificate. As a valued asset in the secondary school system, the athletic trainer could care for the athletes in addition to teaching classes (e.g., physical and health education). The initial curriculum for those seeking employment in athletic training consisted of (Delforge, 1999):

All physical therapy school pre-requisites:

Biology/Zoology (8 Semester hours)

Physics and/or Chemistry (6 Semester hours)

Social Sciences (10 Semester hours)

Other electives as required by the school

Specific course requirements during undergraduate studies:

Anatomy

Physiology

Physiology of Exercise

Applied anatomy and kinesiology

Laboratory physical science

Psychology

Coaching Techniques

First aid and Safety

Nutrition and Foods

Remedial Exercise

Organization and Administration of health and physical education

Personal and community hygiene

Techniques in athletic training

Advanced techniques in athletic training

Laboratory practices in athletic training

Recommended courses

General physics

Pharmacology

Histology

Pathology

The first athletic training education programs were recognized by the NATA in 1969 after colleges and universities were given time to adjust the curriculum to fit the committee's outline. Committee members included ATs from Mankato State University, Indiana State University, Lamar University and the University of New Mexico (Delforge, 1999). The NATA then named the Committee on Gaining Recognition, with its new moniker being the Professional Advancement Committee, into two subcommittees known as the Subcommittee on Professional Education and the Subcommittee on Certification (Newell, 1984). Aptly titled, the Subcommittee on Professional Education developed and maintained the academic curricula of the recognized athletic training education programs, while promoting the development of other programs in a variety of collegiate settings. The Subcommittee on Certification, charged with developing the first certification process, introduced the first certification examination in 1970

and anyone wishing to take the examination completed studies through one of four different preparation paths. Completing a degree from an NATA-approved university with the appropriate coursework completed at a satisfactory level constituted the first route. The second route outlined preparation for the certification examination through an “apprenticeship” program that had similar coursework, but focused on clinical education more than an academic curriculum. Completion of a physical therapy degree illustrated the third route. The NATA felt that being competent as a physical therapist showed adequate preparation for the national certification exam for athletic training. The fourth route allowed athletic trainers that were “actively engaged” in the profession prior to 1970 to be “grandfathered in” as a certified athletic trainer (Westphalen, 1978). Administered in Waco, Texas, in August of 1970, 28 candidates completed the first national certification exam (Lindquist, 2007). The initial exam consisted of two sections. “Basic and Clinical Sciences” contained 75 questions focused on anatomy, physiology, mechanics and pathology of athletic injury as well as the principles of injury prevention. The second section, known as “Theory and Practical Application of Athletic Training,” included 75 written questions and 5 oral/practical questions assessing a candidates understanding of first aid, injury conditions, therapeutic modalities, rehabilitation, and taping and bracing techniques (Grace, 1999).

During the 1970s, athletic training education grew within the collegiate curricula. Along with this growth came the need for a separation from the field of physical therapy for the developing athletic training profession. There were enough students interested in athletic training that new courses could be filled. The NATA presented a revised athletic training education curriculum developed for colleges wishing to provide coursework specifically for athletic training (NATA, 1980). This curriculum included:

Anatomy (1 course)

Physiology (1 course)

Physiology of Exercise (1 course)

Applied anatomy and kinesiology (1 course)

Psychology (2 courses)

First aid and safety (1 course)

Nutrition (1 course)

Remedial Exercise (1 course)

Personal, community and school health (1 course)

Basic athletic training (1 course)

Advanced athletic training (1 course)

Laboratory or practical experience in athletic training including a minimum of 600 hours under the direct supervision of an NATA certified athletic trainer

Compared to the previous curriculum, there was less focus on the pre-professional courses such as chemistry and physics and a stronger focus on the clinical application of skills while under the direct supervision of a certified athletic trainer. During the time spent under direct supervision, the students completed a set of behavioral objectives outlined by the Professional Education Committee. These objectives were in place to ensure that learning skills in the field encompassed a consistent amount of information acquired in the classroom. Different athletic environments incur a myriad of situations and the NATA wanted to help develop a well rounded AT in case the clinical experiences did not utilize certain skills. That was why the behavioral objectives needed to be completed. Along with the modification of coursework and the addition of the clinical experience, the NATA moved away from the

requirement of completing a secondary teaching credential (NATA, 1980). This created more of a focus on the specialization of athletic training, rather than as a secondary position that employed athletic trainer in the high school setting.

The athletic training education field was achieving major milestones in the 1980s. By 1982, the NATA recognized 33 undergraduate athletic training education programs and 9 graduate level athletic training education programs nationwide, a large increase from the initial 4 programs in 1969 (Delforge, 1982). The increased interest from colleges and universities to gain recognition from the NATA for an athletic training education program led to the implementation of a requirement for an athletic training major in recognized institutions prior to the certification exam. The NATA board of directors approved the major in 1980 and allowed the schools 6 years to implement the major. The change was to be completed no later than July 1, 1986, but was delayed and rescheduled for July 1, 1990 (Delforge, 1982). The NATA also developed the *Guidelines for Development and Implementation of NATA Approved Undergraduate Athletic Training Education Programs* in 1983 so that institutions could have a strategy for creating this new major (NATA, 1983). This document Identified specific competencies required of an athletic training student during their education preparation. These competencies were an adaptation from the original behavioral objectives and needed to be adequately demonstrated by the student prior to graduation and sitting for the national certification exam. In order for a student to fully understand and demonstrate these skills, they had to learn specific subject matter required by the NATA (NATA, 1983). This included:

Prevention of athletic injuries/illnesses

Evaluation of athletic injuries/illnesses

First aid and emergency care

Therapeutic modalities
Therapeutic exercise
Administration of athletic training programs
Human anatomy
Human physiology
Exercise physiology
Kinesiology/biomechanics
Nutrition
Psychology
Personal/community health Instructional methods

The NATA implemented a specific formalized instruction plan for the athletic training major to create a separation from physical therapy and secondary education majors. The American Medical Association (AMA) had previously been aware of the field of athletic training, but in 1990, they formally recognized the education curriculum. This news came after the NATA reached out to the Committee on Allied Health Education and Accreditation (CAHEA) to conduct formalized assessment and accreditation of recognized athletic training education programs (NATA, 1990). The NATA felt that utilizing an outside committee to regulate the education process led to a higher recognition through the AMA and was a major step forward for the recognition of athletic trainers as proven allied medical professionals. Meetings were held between CAHEA and the NATA Professional Education Committee (PEC) to develop an assembly of medical professionals as an established board to maintain regulations for athletic training education. This committee, named the Joint Review Committee of Athletic Training (JRC-AT), consisted of members of the American Academy of Family Physicians (AAFP), the

American Academy of Pediatrics (AAP), the AMA, the NATA and a little later in the appointing process, the American Orthopedic Society for Sports Medicine (AOSSM) (NATA, 1995). The main task charged to JRC-AT became development of guidelines and regulations not only for the implementation of athletic training education, but also to develop required standards for each student prior to sitting for the national certification exam. These standards were similar to the competencies in athletic training that NATA-PEC had developed previously, but also were to increase the recognition of athletic training as an allied health profession.

In 1994, CAHEA disbanded due to the proposal that the AMA, instead of being the primary sponsor for the regulation of allied health education, would team up with the United States Department of Education and create a new committee, the Committee on Accreditation of Allied Health Education Programs (CAAHEP). JRC-AT then reported to CAAHEP instead of CAHEA. Under the new joint sponsorship of AMA and the U.S. Department of education, CAAHEP accredited 28 allied health professions in the United States (Rosenthal, 1991). This transfer to a different committee also saw an increase in the number of accredited entry level athletic training education programs as well as graduate level athletic training education programs. There were 82 entry-level athletic training education programs as of June 1998, up from 68 previously recognized programs by NATA (JRC-AT, 1998). Under CAAHEP, programs seeking accreditation must follow a sequence in order to complete the process. The first step included submission of an application to JRC-AT that was then signed by the Chief Executive Officer (CEO) of the institution. This application must include a plan of matriculation through approved coursework and successful completion of a degree or specialization in athletic training. Once the application had been submitted, the program seeking accreditation underwent a 2-year candidacy period in which the JRC-AT evaluated the different aspects of the application

to ensure appropriate standards of practice according to the application. Yearly, the program also had to submit three hardbound copies of a self-study to the JRC-AT detailing the successes or failures of the program. This self-study continued to be submitted after the 2-year candidacy period was completed as well (JRC-AT and CAAHEP, 2001). These self-studies became a form of checks and balances to identify any discrepancies or violations and assure that the standards for accreditation were upheld.

Standardizing the athletic training education process through CAAHEP was a positive step for the field of athletic training as it regulated the material instructed to students, but it was a short-lived endeavor. In the fall of 2003, JRC-AT announced separation from CAAHEP and creation a self-regulated committee known as the Committee on Accrediting Athletic Training Education (CAATE). According to JRC-AT, this committee benefited the field, as it would provide efficiency, flexibility, promotion of the professionalism, and development of collegial relationships (CAATE, 2012). The process for programs seeking accreditation was similar in the fact that an application required approval from the institution's CEO, depending on the institution it could be the president, chief academic officer or whomever they deemed had the authority, however they disbanded the 2-year candidacy period. In addition, CAATE reformatted the site visit policy and materials required. CAAHEP required 21 items to be part of the self-study, whereas CAATE only required 17 (CAATE.net, 2012). The latter CAATE requirements included:

The current academic catalog with AT class times and descriptions

The current application from and criteria for becoming an AT student

A copy of current cards of all NATABOC ATs involved with the program

A listing of all students in the program and their respective clinical supervisors

Job titles and descriptions of all support staff assisting in the athletic training education program

The institutional professional growth policy

A list of all electronic resources available to anyone associated with the AT program

A list of all periodicals available to anyone associated with the AT program

A list of all periodicals owned by the entire institution

Syllabi for all courses associated with the AT program

The current AT Student Handbook

A copy of the AT program policy and procedure manual

A list of all texts utilized in the program

Description and floor plan of all facilities utilized

A list of all instructional uses on-campus therapeutic modalities, rehabilitation and health assessment equipment for instruction and use at all clinical sites.

A list of all instructional use first aid and emergency care equipment and supplies for instruction and use at all clinical sites

A list of equipment inspection dates for all modalities and equipment utilized for instructional use

CAATE enacted a landmark decision on January 1, 2004 when it ceased recognizing students from internship athletic training education programs as viable candidates to sit for the national certification exam. Up to this point, two routes for completing the requirements to sit for the national certification examination had been recognized and utilized. This meant that all programs had to become more curriculum based instead of the internship option, changing the educational process for many institutions. Due to this change, many athletic training education programs were discontinued instead of transitioning into the academic program. By 2005, all athletic training education programs had to be in accordance with the new standards placed by CAATE, or the students enrolled in their curriculum could not sit for the board certification exam. Since this time, CAATE has created updated editions to their standards, but have been the accrediting body that has been in place since separation from CAAHEP.

2.2 Current curriculum requirements (As of 11/1/12)

The bases for an athletic training education program to be recognized and accredited through CAATE are outlined in the *Standards for the Accreditation of Professional Athletic Training Programs*, which can be viewed at any time on their website, www.CAATE.net. The standards are a culmination of eight different content areas that are pertinent to the field of athletic training. CAATE recognizes those fields as:

Evidence-Based Practice

Prevention and Health Promotion

Clinical Examination and Diagnosis

Acute Care of Injury and Illness

Therapeutic Interventions

Psychosocial Strategies and Referral

Healthcare Administration

Professional Development and Responsibility (CAATE Standards)

This information is taught to athletic training students through didactic, laboratory and clinical courses offered by the institution. The acquisition of this information must also be taught through a continuum of learning over time under the direct supervision of a preceptor deemed competent by the institution. A preceptor can include ATs, physicians, physical therapists and anyone practicing in the medical field. This allows the student to utilize the information from the classroom in a variety of different applicable settings. For instance, a student learns a specific orthopedic examination in a classroom and is allowed to practice it in the laboratory setting. During the clinical experience, the chance arises that the examination is required to determine an injury the athlete has sustained. The student, under direct supervision of a preceptor, is allowed to perform the examination. The student's skills are then discussed with the preceptor following the examination and evaluated on performance.

Initially, if an institution wishes to receive CAATE accreditation for their athletic training education program, the institution must be accredited through the United States Department of Education or a Council for Higher Education Accreditation recognized agency. Along with this recognition, an \$1800 yearly fee for accreditation must be paid. The institution must offer a minimum of a baccalaureate degree in athletic training. Within this athletic training education program, there must be an educational mission with goals and objectives for the quality of student learning, instruction and overall effectiveness of the program (CAATE Standards, 2012).

The institution must employ an athletic training education program director, a clinical education coordinator, athletic training faculty and preceptors to complete a staffing team. All of these individuals play a role in the completion of the education process for students wishing to complete the program.

The educational content of the institutions athletic training education program is not specifically outlined in the *CAATE Standards for the Accreditation of Professional Athletic Training Programs*, but the manner in which the information is disseminated and regulation of the athletic training student's learning process is outlined. The requirements in place by CAATE on the athletic training programs is as follows (CAATE Standards, 2012):

A current version of all athletic training knowledge, skills and abilities must be utilized

Structured classroom, clinical and laboratory environments must be involved in the formal instruction of the athletic training material.

Athletic training students must have the opportunity to interact with other medical and health care personnel on a continual basis throughout their learning process.

Course syllabi detailing specific measureable objectives must be utilized and clearly written in all athletic training courses.

A logical progression must be followed during clinical education in which the student gains clinically supervised responsibility through an increasing amount of autonomy

leading up to graduation or culmination of education.

Opportunities for real time experiences must be afforded to the athletic training student to hone skills and clinical abilities that a practicing AT would experience.

Athletic training students will have opportunities to interact and associate with different patient populations and different allied health providers.

Discrimination based on sex, ethnicity, religious affiliation, or sexual orientation for clinical education assignments will not occur.

Opportunities for the athletic training student will include, but are not limited to:

- Team and individual sports

- Sports requiring protective equipment

- Teams of different sexes

- Patients that are of a non-sport population

- Different disciplines within the realm of medicine

Sites that are utilized for clinical education will be evaluated on regular basis to ensure quality of education at each site.

The majority of an athletic training student's clinical experience will be under the direct supervision of a BOC AT.

In order for an athletic training student to perform skills on athletes, he or she must be officially enrolled in the athletic training education program.

Clinical experiences must be educational in nature. Athletic training students must have a minimum of one day off per 7-day period and the athletic training education program must outline a minimum and maximum hours required for the clinical experience.

Preceptors must undergo a provision for clinical education opportunities. This includes regular communication with the athletic training education administration.

The preceptor must be physically present when athletic training students are performing skills in order to intervene if the athlete or patient is in imminent harm.

The National Athletic Trainers' Association Executive Committee for Education (NATA-ECE) has developed the specific learning content for the athletic training education programs accredited by CAATE. Over time, this information has evolved along with the profession of athletic training. The NATA-ECE, Board of Certification and CAATE recognize nine categories in the *5th Edition Competency Matrix* as specific learning elements (CAATE.net). Each of these categories is recognized as individual entities and must be taught through the learning over time concept that has been established for athletic training education programs.

2.2.1 Category 1: Evidence Based Practice (EBP)

Evidence Based Practice (EBP) is comprised of 14 specific items that must be taught in and evaluated within the athletic training education program. Students must be able to recognize and analyze current research published within the allied health field. The student must be able to critically evaluate this material, as well as incorporate it into their athletic training practices. This section, a new section added for the fifth edition of the competencies, is important for students as they recognize the potential impact of technology and advances in research, implementing those that are applicable to improve patient care.

2.2.2 Category 2: Prevention and Health Promotion (PHP)

The Competency Matrix is known as Prevention and Health Promotion (PHP). This category has 49 specific items divided into 8 subcategories. These subcategories are: General Prevention Principles, Prevention Strategies and Procedures, Protective Equipment and Prophylactic Procedures, Fitness/Wellness, General Nutrition Concepts, Weight Management and Body Composition, Disordered Eating and Eating Disorders, and Performance Enhancing and Recreational Supplements and Drugs. In the General Prevention Principles, the student must recognize epidemiological ideals that take place within the field of athletic training as well as medicine. This can include injury rates, prevalence, monitoring systems and risk factors in athletic participation. Prevention Strategies and Procedures includes ideals such as pre-participation physical exams, as well as environmental concerns that are the responsibility of the athletic trainer for monitoring the athlete's safety and well being. Protective Equipment and Prophylactic Procedures provide an understanding of the type of equipment utilized for constructing

and properly fitting bracing and other special devices the athlete may require for participation. The main concepts covered in the Fitness/Wellness category include the general ideals of proper hygiene and exercise for the basic athlete, as well as methods for designing and implementing fitness programs to enhance the abilities of athletes. General Nutrition Concepts include proper dietary intake and instruction on the basics of nutrition (e.g., protein, carbohydrate, vitamin and mineral consumption), as well as hydration and proper re-hydration techniques for optimum performance. Weight Management and Body Composition work in concert with the General Nutrition Concepts to help the athletic training student understand proper body composition for optimum performance in athletics, whether the athlete is in need of gaining or losing weight for optimum participation in their sport. This also includes techniques for evaluation of body composition and eating habits. Disordered Eating and Eating Disorders is an important sub-category as it focuses on the dangers of problematic eating that athletes face, and how to recognize and refer these athletes to proper care when the signs and symptoms of disordered eating appear. Most recently, there has been a surge of interest in the supplement and drug industry to help athletes gain an edge over their opponents. The Performance Enhancing and Recreational Supplements and Drugs portion of PHP helps athletic training students gain valuable knowledge for optimizing performance while limiting bodily harm. This can include athlete education about supplement and drug use as well as physiological responses of the body to the use of supplements and drugs.

2.2.3 Category 3: Clinical Examination and Diagnosis (CE)

Clinical Examination and Diagnosis (CE) examines orthopedic assessment of the skeletal body of athletes, as well as evaluates function and biomechanical analyses of motion.

Along with the clinical orthopedic assessment, the athletic training student must also be able to perform an assessment of general medical conditions that an athlete may incur, such as illness, dermatological concerns and infections. This must be accomplished through thorough evaluation skills and a general knowledge of assessment tools from the medical field, including muscle, neurological, and general medical testing. This category is comprised of 21 different items of assessment with the final two items outlining the testing process through a total of 26 specific points.

2.2.4 Category 4: Acute Care of Injuries and Illnesses (AC)

Acute Care of Injuries and Illnesses (AC) focuses the athletic training student's education on managing problematic situations with athletes in a timely and efficient manner. This category is comprised of six subcategories as follows: Planning, Examination, Immediate Emergent Management, Immediate Musculoskeletal Management, Transportation, and Education. The Planning subcategory introduces the legal, moral and ethical aspects of injury management, and outlines responsibilities and roles that a person accepts when he or she becomes an athletic trainer. The Examination section utilizes the assessment of the scene, as well as the athlete, to properly develop a plan of care. Immediate and Emergent Management helps the athletic training student enact their developed plan for optimal acute care of an injured athlete. This also includes CPR, First Aid techniques and Emergent Care such as airway obstruction and exercise-induced asthma. Immediate Musculoskeletal Management is similar to Immediate and Emergent Management as it

continues to focus on acute care of injured athletes, but focuses more on the immobilization of injured appendages and musculoskeletal injuries. The Transportation subcategory focuses not only on the transportation of the athlete to the appropriate medical facility, but also the appropriate mode of movement for the injured athlete from the field of play. This can include spine boarding as well as emergent transportation, (i.e., two-person carries) and transportation via ambulance. Being able to instruct not only the athlete in proper home care of an injury, but caregivers associated with the athlete (i.e. parents, roommate, or significant other) is the main focus of the Education subcategory. This is important as it allows the athlete and others to aid in the treatment and recovery from injury.

2.2.5 Category 5: Therapeutic Interventions (TI)

The Therapeutic Interventions (TI) category encompasses physical rehabilitation skills as well as therapeutic modalities and therapeutic medications. Each of these subcategories deals with the recovery of an athlete in their journey to return-to-play or overcome an injury, and encompasses 31 total items of learning. Physical rehabilitation includes therapeutic exercise prescription, as well as overcoming the pain cycle through such techniques as immobilization and manual mobilization. A student will need to understand the physiology and use of therapeutic modalities such as electric stimulation and ultrasound, as well as their contraindications. This will assist in the healing process without causing further harm or damage to the tissue or body part that has been injured. Medications can also optimize the healing process for an athlete and athletic training students will need to be aware of the benefits and potential side effects. This includes prescription medications administered by a physician to over-the-counter medications

that an athletic trainer may suggest. Holistic medications such as herbals and vitamins fall under this scope of practice as well.

2.2.6 Category 6: Psychosocial Strategies (PS)

Athletes show varying personality traits that have the potential to improve and enhance, as well as exacerbate or hinder their performance. An athletic trainer needs to be able to recognize these traits and either help the athlete utilize these characteristics to enhance performance or cope with them. The Psychosocial Strategies (PS) section, new with the fifth edition of the competencies, addresses this issue. It is divided into three different sub-categories: Theoretical Background, Psychosocial Strategies, and Mental Health and Referral, and consists of 18 specific items that need to be learned by the athletic training student. Theoretical Background outlines ideals within a personality including emotional response to injury, decision-making, and interpersonal skills. The Psychosocial Strategies help an athletic training student assist the athlete in overcoming adversity by utilizing techniques such as imagery, self-talk and goal setting. Mental Health and Referral gives the athletic training student a better understanding of personality traits and behaviors that require assistance beyond the scope of sports medicine and can aid an athlete by obtain the guidance needed to perform better and deal with issues outside of sport that are affecting them.

2.2.7 Category 7: Healthcare Administration (HA)

Healthcare Administration (HA) encompasses the legal and organizational concerns of athletic training. The NATA has outlined many ideals in the successful implementation of athletic training in the clinical, educational and professional settings. These ideals include strategic planning for a successful athletic training room or clinic, as along with

managing inventory, budgeting and expenditures. In order for an athletic training student to fully understand the competencies put into place, they also need to understand legal guidelines and principles of practice that are included in the 30 items of this section. This section outlines the required federal and local guidelines, as well as scope of practice of an athletic trainer in a specific setting.

2.2.8 Category 8: Professional Development and Responsibility (PD)

The field of athletic training has evolved into a recognized allied health field and in order to continue their success as an organization, future athletic trainers must continue to prove successful. The Professional Development and Responsibility (PD) section of the competencies ensures that athletic training students have a solid history of the field of athletic training as well as the legal and community obligations that are placed on them. Within the 12 items outlined in this section, the athletic training student must have a strong knowledge of the NATA, its Code of Ethics, Role Delineation and scope of practice as well as influences that may be placed on healthcare by athletic training. This will enable the field of athletic training to continue providing a positive influence on sports medicine.

2.2.9 Category 9: Clinical Integration Proficiencies (CIP)

The Clinical Integration Proficiencies (CIP) is the final section of the *5th Edition Competencies Matrix*. This section integrates each of the preceding 8 categories into a comprehensive clinical education for the athletic training student. The CIPs allow the AT student the opportunity to utilize skills that are learned in the classroom in a real time scenario under the supervision of a preceptor. Each student must complete all CIPs prior to graduation and sitting for the national certification exam.

Each of the sections of the Competencies Matrix addresses a different aspect of the field of athletic training and will continue to evolve as technology and medicine advances. The CIP section of the Matrix assists student learning over time, a concept addressed by the NATA and the CAATE, and allows the athletic training student to coordinate skills in theoretical models as well as real time situations with the reassuring supervision of a preceptor.

2.3 Socialization to the field of athletic training

A driving influence in the success of an athletic trainer in the field is socialization. Professional socialization can enhance athletic training success and appreciation in the field or have a negative impact on experiences leading to burnout and job dissatisfaction (Pitney, 2002). An athletic trainer, as with many in the allied health and physical education fields, undergoes a theoretical framework of socialization into the profession through three basic phases (Lawson, 1983a; Lawson, 1983b, Lortie, 1975, Hayden, 1995; Harvill, 1981):

Anticipatory Socialization

Professional Socialization

Organizational Socialization

2.3.1 Anticipatory Socialization

Anticipatory socialization occurs when a student, early in the educational process, is exposed to the field of athletic training. This can occur through personal experience, such as being injured while participating in athletics, or through exposure at such events as a career fair or field trip. The importance of athletic trainers practicing in the high school setting is not only valuable for the prevention, treatment and rehabilitation of injured athletes, but also as an

important promoter of the field of athletic training. Many times, this can be the first interaction a student has with the profession. After being made aware of the field, the student searches out more information about the field and pathways for becoming a certified athletic trainer. During this phase, the student has minimal understanding of what truly occurs in the field of athletic training, but has a piqued interest and ventures further to find out more about the profession.

2.3.2 Professional Socialization

The interest that begins during the anticipatory socialization stage is furthered through the professional socialization stage in which the student seeks out formal education in the field. Collegiate courses such as science, psychology, biomechanics and athletic training application courses enlighten the student to the needs of the profession of athletic training. It is at this stage of the socialization that the student gains a stronger understanding of the field from not only an educational perspective, but also through clinical application. Within the literature for nursing and physical therapy organizational socialization, this is the stage in which the student begins to assimilate true experiences in the field through the use of clinical laboratories as well as shadowing experiences (Teschendorf, 2001). This is also the phase in the socialization process in which values, attitudes and norms of behavior are introduced and develop within the student (Hayden, 1995). These values can enhance a student's desire to be in the profession or hinder their growth, causing a stronger likelihood of job dissatisfaction or burnout when they have arrived in the professional setting (Winterstein, 1998). The professional socialization phase extends for some athletic training students through a graduate assistantship (GA). A GA is a certified athletic trainer gaining not only experience through advanced education, but also practicing within the clinical aspect of athletic training with the assistance of other, more experienced certified athletic trainers on staff at the institution granting the advanced degree.

The GA can develop and mature their skills as well as having a clearer understanding of limitations within their current experience level. This type of advanced education enlightens the student to nuances of athletic training not taught during their initial education, such as intra-institution politics and organization they may not have encountered completing their baccalaureate degree.

2.3.3 Organizational Socialization

The final phase in the socialization of professionals in athletic training is organizational socialization in which the certified athletic trainer, following completion all of the necessary schooling, attains a position where they are the medical authority (under the tutelage of a physician) for an institution. This can include the industrial setting, the clinical setting within a medical facility, high school position, collegiate position or professional position in other settings. Within this realm, the practicing AT depends on their educational background along with organizational preparation or mentoring provided by the employer. In a study done by Pitney et al (2002) of ATs at the Division 1 level of the National Collegiate Athletic Association (NCAA), many of the responses displayed a sense of being overwhelmed by a new setting, the intense volume of work required and the added responsibilities not necessarily related specifically to patient care (Pitney, 2002). Additionally, many of the subject's responses identified a lack of "formal induction processes" into the field to fully understand the role that they were holding at the institution, seemingly a sense of "learning on the run." A successful institution or organization can improve this situation by introducing a mentoring program in which a more senior athletic trainer within the institution assists a new employee with situations that are not within normal educational protocols, similar to suggestions made by Parkay et al

(Parkay, 1992). This may aid in the reduction of burnout, work-family conflict and job dissatisfaction.

2.4 Challenges that occur in the field of athletic training

The field of athletic training continues to be recognized as a growing allied health field, however there are certain parameters in the profession that require a strong set of coping skills to achieve success. If these skills are not utilized, burnout, work-family conflict or a departure from the profession can occur. It has been documented that athletes achieve burnout in their sport due to overtraining and a lack of variety (Feigley, 1984, Morgan, 1987), this can occur in athletic trainers as well (Hendrix, 2000). The characteristics of burnout are depicted as negatively-perceived events that are uncontrollable by the person that lead to 1) depersonalization, 2) emotional exhaustion and 3) a feeling of a lack of personal accomplishment. Depersonalization can be described as having unfeeling or uncaring responses to patients. Feelings of fatigue and emotional overextension due to patient and colleague interaction are the main characteristics of emotional exhaustion and decreased feelings of personal accomplishment include a feeling of worthlessness and/or failure (Maslach, 1996). These characteristics may be due to chronic stress, overexposure to high-pressure situations in the work place and general job dissatisfaction. The Maslach Burnout Inventory (MBI) was developed by Maslach and Jackson to help diagnose the problem, and has become one of the key tests to identify burnout in many professions (Maslach and Jackson, 1981).

The Cognitive-Affective Model of burnout developed by Smith describes burnout as a long-term concern that evolves through perceived demands that includes possible physiological changes in the person that can lead to medical concerns (Smith, 1986). Stressors that can lead to the increase in burnout include continued high work volume, required long hours at the

workplace, unclear roles and responsibilities within the workplace, conflicting responsibilities as well as interpersonal conflicts among co-workers (Capel, 1990)

Netermeyer defines work-family conflict as “a discord that arises when the time devoted to or time spent fulfilling professional responsibilities interferes with or limits the amount of time available to perform family-related responsibilities” (Netermeyer, 1996). Mazerolle et al describe factors that lead to work-family conflict as long work hours and included travel, job satisfaction, job burnout and intention to leave a position (Mazerolle, 2008b). The profession of athletic training requires great time commitment when working with sports. Many times, the athletic trainer arrives hours prior to an event (i.e., practice or competition) and is required to stay after to complete post-workout treatments. This can cause a strain on the athletic trainer and this person’s out-of-work lifestyle, such as time spent with family, friends or even personal time needed for activities to balance a person’s life (i.e. exercising, religious preferences or personal time). Pitney describes that obligations to family, friends and work will weigh differently on the individual. This can cause internal conflict within that person as a feeling of competition of “selves” within that person can lead to animosity and unhappiness (Pitney, 2006).

Although these challenges occur in the field of athletic training, researchers are determining which factors are the leading causes of burnout and work-family conflict (Mazerolle, 2008a, Netermeyer, 1996, Hendrix 2000). There is also research determining which factors can minimize these effects. Reed (2004) outlined 10 major factors that ATs utilize to reduce the negative effects of the profession (Reed, 2004). They are:

Planning

Instrumental social support

Adjusting to job responsibilities

Positive evaluations

Emotional social support

Humor

Wishful thinking

Religion

Mental or behavioral disengagement

Activities outside the profession

Other suggestions to decrease work-family conflict and burnout include creating flexible hours for work during off-season times, increasing staff numbers so that athletic trainers do not have to cover multiple sports during different seasons and utilizing compensatory time off for extra hours worked (Mazerolle, 2008b). Currently, the CAATE has no required education for athletic training students in any of these fields (Mazerolle, 2008c), but incorporation of coping skills into athletic training education programs can help strengthen athletic training students in preparing for future endeavors in the field. A strong setting of coping skills help the athletic training student work through issues that may occur while practicing in the field. In addition, ATs that are currently practicing can pass along coping strategies they find successful when practicing in the profession.

2.5 Learning styles in Athletic Training Education

The current trend in athletic training education is problem-based learning in which students learn material and are able to put the knowledge they gain to use in scenario or laboratory settings. Heinrichs outlines that “[t]he greatest challenge facing any professional-education program (e.g., medicine, health professions, law, business, aviation) is to produce professionals who are capable of independent and critical thinking, who can sequentially analyze and solve dynamic problems, who possess a commitment to lifelong learning, who can rapidly understand problems in order to make critical decisions on the field and in the clinic, and who can work as part of a team” (Heinrichs, 2002). These goals are met by the athletic training student through proper instruction and adequate access to learning scenarios within their education.

Initially, an athletic training student needs a solid foundation of knowledge to continue through the active learning process. This includes a working knowledge of basic science as well as an established understanding of kinesiology and modern medicine. These didactic skills, along with a level of maturity allow engagement in the learning process from an internal fixation in order to become a stronger athletic trainer. This level of maturity comes through societal experience, as well as a desire to learn out of necessity for clinical application. This is concurrent with Knowles’ work with andragogy in adult learning (Knowles, 1980). Knowles’ theory outlines four original and two later known assumptions of the adult learner. They are 1) a person evolves from a dependent personality to a self-directed learner as the person matures, 2) a major resource that an adult learner relies on is the experience that they have accumulated, 3) the social role of an individual can determine inclination for need and want to learn as an adult, 4) knowledge that is learned for an adult learner is utilized immediately rather than in the future, 5)

internal motivation is key versus external drive, and 6) There is a need to know why they need to learn material (Merriam, 2007).

Once a student reaches a level of maturity to be considered an adult learner and plays an active role in the education process, Biddle identified that the integrative framework they are working with is dependent on one of two theories, either the self-efficacy motivation theory or the self-determination theory (Biddle, 1999). The major hypothesis in the self-efficacy motivation theory relies on the instructor making the learner feel wanted and competent in the learning environment. This provides the learner a sense of confidence and ease to allow a sense of worth in the learning process as well as a sense of ownership in the material learned (Bandura, 1986). Personal ownership of their education needs to be present in the athletic training student in order to take control of the learning process. Utilizing instructors that create a positive learning environment shows the learner that more is accomplished in the learning progression when the student has a sense of worth and feels needed within the process. The second theory that Biddle identifies with, the self-determination theory, encompasses two general classes of motivation: the self-determined and the controlled learner. The self-determined learner is an active learner choosing to be a part of the learning process and has an internal drive to succeed due to either choice or previous experience (Biddle, 1999). The controlled learner is regulated through compliance and experience, meaning the learning process is completed because it is part of a plan or a necessity for progression (Deci, 1999). This plan can include career goals, achievement in the field of athletic training or simply a desire to help others.

The field of athletic training education requires its students to achieve a level of learning that places them in the category of adult learners for two main reasons. The first is that the level of expertise required to assist others in emergency medicine, treatment and rehabilitation of

injuries as well as psychological issues also requires a level of maturity associated with professionals that aim for success in academics. The second is that in adult learning, students utilize experience in the learning process, as well as the information taught in the present rather than the future (Johnstone, 1965). The information taught in the athletic training education program is learned, practiced and employed in the sports medicine setting by students on a daily basis while interacting with the athletes. This immediacy of use also reinforces to the learner to become self-directed in the learning process as a result of needed information to help athletes. The concept of self-directed learning (Merriam, 2007) can be outlined as follows:

- To enhance the ability of the adult learners to be self-directed in their learning,
- To foster transformational learning as central to self-directed learning,
- To promote emancipatory learning and social action as an integral part of self-directed learning

Self-directed learning teaches the athletic training student to seek out information they feel is critical to their education and future endeavors in athletic training. This means that self-directed learners should never stop learning and in order to flourish, they always seek out new information to utilize in the field. In order for an instructor to facilitate self-directed learning in the athletic training education program, they create positive learning environments for the students. Mensch (2002) found that educational environments led by instructors that promoted self-directed learning in the athletic training education programs surveyed led to increased motivation to learn, persistence and adaptive behaviors (Mensch, 2002). This also led to a stronger learner/instructor and peer-to-peer relationships.

The second concept of self-directed learning encourages the learner to challenge prior ideals. In order for this to occur, a previous level of learning must be achieved and is many times developed through didactic learning. Philosophies developed from these didactic experiences are then challenged by new information and the student actively determines his or her stance on the information previously driven by their belief system. Once this information is discussed and re-evaluated, the learner then is able to understand material from different perspectives and then, as Brookfield explains, able to “become critically aware of what has been taken for granted about one’s own learning” (Brookfield, 1985).

As a student learning in the field of athletic training, many different techniques and concepts within the field can accomplish the same goal of returning an injured athlete to play or preventing the occurrence of injury to the athlete. What a self-directed learner achieves, in order to be successful, is a sense of which concepts to employ within given scenarios. Many times, in the athletic training programs, a concrete technique is taught and the student learns the theory and concepts behind it, but when they attend a conference or workshop they learn a new idea that challenges past teachings. The self-directed learner then recognizes each of the concepts, decides which one works best for their situation, or create a new ideal from a comprehensive look at what has been learned to develop yet another way to form ideals for preventing an injury or returning an athlete to play. This promotes what is known as emancipatory learning by athletic training students, as well as the production of new ideals to enhance the field of athletic training and assist athletes.

CAATE employs a concept known as learning over time as a key component of all accredited athletic training education curricula (CAATE.net). This means that a student initially becomes exposed to the information or concepts didactically in the classroom and then is

allowed to practice the skills in a clinical laboratory setting. This allows the athletic training student to perform tasks with the direct supervision of an instructor to help them when unsure of a concept or assistance is required to perform a skill. Once the skill is understood, practiced and a clear understanding of when to utilize the skill is understood, the students are allowed to gain experience under the direct supervision of a practicing AT. The AT allows students to perform skills on athletes in need of assistance for the reason that the skill is required, but is in direct supervision to intervene if the student is performing incorrectly or placing the athlete into a harmful situation. This is similar to operant conditioning outlined by Skinner (1974) and allows the athletic training student repetitions of practice prior to being an AT without supervision (Skinner, 1974).

Problem-based learning (PBL) is another concept often employed by athletic training education programs to aid in the acquisition of knowledge and skills of the students. PBL is rooted in cognitive psychology in which the learner plays an active role in understanding theories and concepts. The idea is that groups of learners are given a task in order to accomplish a goal, which is solving a problem. This problem is based on real world scenarios and requires either a previous knowledge about specific concepts or the self-learning of these concepts by the collective group. PBL also employs leadership qualities, group cooperation, communication skills and team building (Heinrichs, 2002). According to Barrows (Barrows, 2000), four processes must occur when a problem is introduced to the group:

Development of possible hypotheses as to the cause, physical diagnosis and/or management of problem,

Pertinent information is obtained,

Issues in the case that are unclear to the group are divided up and overcome by information individual group members obtain, learn and share with the group,

The hypothesis, data and learning issues are reassessed in order to solve the problem given to the group

Medical schools have been documented as utilizing PBL as early as 1969 at McMaster University, the College of Human Medicine at Michigan State University, Maastrich University in the Netherlands and Newcastle University in Australia (Barrows, 1996). The implementation of PBL within the medical field training allows students the opportunity to take an active role in their education, as well as allow them to develop problem-solving skills utilized in the clinical application of their profession. Barrows also describes educational objectives that are possible through the utilization of PBL within the field of medicine. They are as follows:

The acquisition of an integrated knowledge base,

The acquisition of a knowledge base structured around the cues presented by patient problems,

The acquisition of a knowledge base enmeshed with problem-solving, processes used in clinical medicine,

The development of an effective and efficient clinical problem-solving process,

The development of effective self-directed learning skill,

The development of team skills (Barrows, 1996).

Within each of these educational objectives, the learner, in this case the medical student, plays an active role not only in the learning process, but also with gaining experience in problem solving when issues arise. Not all patients act like a textbook case and have every problem be well defined. That is why the medical student needs to develop the appropriate questions and responses to unorthodox symptoms with patients. The same can be assimilated for athletic training students in a small window of time to determine the appropriate diagnosis of an athlete to determine if the athlete is fit to return-to-play or should be held from participation. Along with the emergency side of athletic training, if an athlete is performing rehabilitation and not responding to the exercises as desired, the athletic trainer adjusts and allows for variations so that the outcome for the athlete can be positive. Many of these cases are optimized with the use of problem-based learning within the athletic training education program.

Similar to PBL is a concept known as the Sociocultural Learning Theory (SLT), in which social interaction of the learner needs to take place in order for learning and maintenance of interest in the learning process (Vygotsky, 1978). Vygotsky (1978) emphasized three major themes that provided the guidelines for SLT. Social interaction playing a large role in the cognitive development of skills is the first major theme. Secondly, he contends that the tools for learning are not created through isolation of ideals, but through communal evolution of a society working together toward a common goal. The third and final theme is that learning is a developmental or genetic process in which cultural development focuses on the process by which higher learning is achieved, not only by the material (Vygotsky, 1978). Within these ideals, Vygotsky introduces the concept of scaffolding of concepts built upon one another to create higher learning. The breaks in knowledge are completed through past experience of instructors with material or concepts, similar to a support structure for education.

2.6 Educational standards in other medical professions

2.6.1 Nursing

Nursing, a medical field in the allied health discipline, requires an initial broad spectrum of medical education becoming more focused as a person targets a specific niche within the field. A foundation of scientific material such as chemistry, physics and anatomy is required as well as interpersonal and evaluation skills. These skills cannot be taught strictly from a book in order for a person to be a successful nurse. According to Ebbert, “[c]ompetencies of nurse practitioners are dependent upon development and application of a strong fund of knowledge in the specialty area and demonstration of technical, interpersonal, and critical thinking skills, attitudes and ethics” (Ebbert, 2004). This means that a person practicing in the nursing field not only understands medicine, but also utilizes the correct techniques at the appropriate time, and accommodates the needs of the patient. In order for this to occur, educational facilities utilize Standardized Patient Experiences (SPEs) in which actors and actresses create “real-life” laboratory situations for the nursing students. During these SPEs, the clinician, a nursing student, thoroughly evaluates the patient’s history from an actor or actress who has studied the signs and symptoms of the disease or illness portrayed to determine the appropriate course of action for the patient. The patient reacts and responds to the delivery of diagnosis and treatment as a true response and the practitioner deals with the situation accordingly. Educationally, this allows the instructors to evaluate the students from a formative and summative evaluation. The formative evaluation allows the instructors to identify the strengths and weaknesses of the student as the experience is taking place. The summative evaluation occurs after the experience has taken place and the student and instructor evaluate the scenario together (Gagne, 1974).

When assessing the SPEs, a criterion-referenced evaluation is utilized with a predetermined level of expertise expected for each level of student. This mandates that the student must be at a specific level of education prior to advancing to the next course or sequence of criterion. The majority of the times, SPEs are utilized at the conclusion of the semester so that a student is allowed to learn the material and become familiar with the techniques through learning laboratory settings. Students in the nursing programs report a strong agreement with the sense of realism, usefulness of feedback by SPEs and challenge of SPEs when surveyed after completion of a program within a larger Midwestern university, 4.8 out of 5 on a Likert Scale (Ebbert, 2004).

The use of SPEs provides a quality opportunity for nursing students to utilize models that have been coached in the signs and symptoms of an illness or disease, but it is also costly. The institution providing the education for the nursing students absorbs the cost of hiring the actors or actresses for the scenarios, as well as the preparatory work required for learning the role they are playing. Typically, the actors and actresses are hired at an hourly rate during specific times of year and the cost of hiring them can be included in the tuition for the students, but is a cost that is incurred when utilizing the SPE.

2.6.2 Physician (MD or DO)

The role of the physician is similar to that of an athletic trainer in that patient care is required to assist someone with an injury or illness. The level of schooling and expected understanding of medicine is higher in a physician versus an athletic trainer, but the learning process of medicine is similar. The Accreditation Council for Graduate Medical Education (ACGME) is similar to the CAATE in the recognizing of 6 general competencies for the completion of an advanced medical degree. Those competencies are 1) patient care, 2) medical

knowledge, 3) practice-based learning and improvement, 4) professionalism, 5) interpersonal and communication skills and 6) systems-based practice (ACGME.org, 2012). Each of these competencies is introduced in the classroom or laboratory setting during medical school, then practiced and utilized throughout a medical students residency period. Upon the completion of the residency program, students are required to master these skills according to the standards in place through the ACGME.

In order to be considered fully proficient in the patient care competency, a resident “must provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health” (ACGME.org, 2012). This competency and description also include a checklist of information that must be established in order to be complete.

Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families

Gather essential and accurate information about their patients

Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence based, and clinical judgment

Develop and carry out patient management plans

Counsel and educate patients and their families

Use information technology to support patient care decisions and patient education

Perform competently all medical and invasive procedures considered essential for the area of practice

Provide health care services aimed at preventing health problems or maintaining health

Work with health care professionals, including those from other disciplines, to provide patient-focused care

The description of medical knowledge according to the ACGME is that a medical student “must demonstrate knowledge about established and evolving biomedical, clinical and cognate sciences and the application of this knowledge to patient care” (ACGME.org, 2012). The checklist that is associated with this includes:

Demonstrate an investigatory and analytic thinking approach to clinical situations,

Know and apply the basic clinically supportive sciences that are appropriate to their discipline.

Practice-based learning and improvement includes a solid understanding of new techniques that have been introduced and utilized in the profession. Competency in this category requires that a student “must investigate and evaluate their patient practices, appraise and assimilate scientific evidence, and improve their patient care practices” (ACGME.org, 2012).

This includes:

Analyze and practice experience and perform practice-based improvement activities using a systemic methodology,

Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems,

Obtain and use information about their own population of patients and the larger population from which their patients are drawn,

Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness,

Use information technology to manage information, access on-line medical information, and support their own education,

Facilitate the learning of students and other health care professionals.

Communication is crucial in the medical field not only with patients, but also within the health profession in order to complete the proper diagnosis and treatment. The ACGME has established that a medical student “must demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patients families, and professional associates” (ACGME.org, 2012). These expectations include:

Create and sustain a therapeutic and ethically sound relationship with patients,

Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills,

Work effectively with others as a member or leader of a health care team or other professional group.

To gain trust and credibility in the medical field, a strong level of professionalism is required. The definition of professionalism through the ACGME standards is that a medical student “must demonstrate a commitment to performing professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population” (ACGME.org, 2012). To establish this a student must show:

Respect, compassion, and integrity; a responsiveness to the needs of patients and society that supersedes self-interest; accountability to patients, society, and the profession; and a commitment to excellence and ongoing professional development,

Commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices,

Sensitivity and responsiveness to patients’ cultures, age, gender, and disabilities.

The final competency outlined by the ACGME, systems-based practices, alludes to a larger scale awareness of the medical field. A medical student “must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value” (ACGME.org, 2012; Marple, 2007). This includes:

An understanding of how their patient care and other professional practices affect other health care professionals, the health care organization, and the larger society and how these elements of the system affect their own practice,

Know how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources,

Practice cost-effective health care and resource allocation that does not compromise quality of care,

Advocate for quality patient care and assist patients in dealing with system complexities,

Know how to partner with health care managers and health care providers to assess, coordinate, and improve health care and know how these activities can affect system performance,

These standards set forth by the ACGME are assessed within the previous competencies, however different avenues of testing are utilized in different medical programs. Structured Oral Examination (SOE), in which a student verbally describes the scenario and the methods to accomplish treatment, is one of the avenues utilized in medical competency (Hottinger, 2006). This is a common technique in the Swiss medical licensing process and is becoming more common in the United States. The other technique in assessing clinical competence in medical students and residents is through Standardized Patient-based Clinical Examination (SCE). Similar to the SPE of a nursing student, an actor or actress is given the signs and symptoms of an illness or disease and the medical student works through the scenario to determine the pertinent diagnosis (Vu, 1994). The second approach, the SCE, is utilized in the United States Medical License Examination (USMLE) during step two of the board licensing procedures of a medical student (USMLE.org, 2012). During this examination, medical students work directly with a

“patient” to determine the pertinent diagnosis, as well as the course of action required to begin treatment for the disease or illness.

2.6.3 Physical Therapy

The field of physical therapy utilizes many different techniques of education, however to become a licensed physical therapist, a person successfully completes a national exam similar to that of a medical boards examination. In the last 10 years, the field of physical therapy education has undergone a change in schooling requirements from a master’s level degree to a doctorate level degree prior to being able to sit for this exam. This change in post baccalaureate education allows students to accumulate a stronger understanding of the field of physical therapy in academic and professional settings. The change to a terminal degree from an outsider’s perspective is one that allows more time to study the field for a stronger understanding of the material. From an internal perspective, the extension of the program allows the physical therapy student a better opportunity to work with the material from a laboratory setting, as well as gain experience through extended internships with practicing physical therapists.

The profession of physical therapy has a previous history of utilizing PBL as previously discussed in this research. The concept of a PBL focuses the learning objectives to diagnose and treat patients within the health care scenarios. They also allow the students to access their previous knowledge of the basic sciences and experience over time. Three common approaches utilized when focusing the curriculum on PBL are 1) sole use of PBL in a curriculum for learning, 2) a transitional curricula and 3) a single course approach (Solomon, 1996). The curriculum that focuses solely on the utilization of PBL has been shown to have an initial difficulty level for beginning students, but as the student becomes familiar with the process, a clearer understanding of the material is seen. A transitional curriculum allows the students to

utilize previous successful learning techniques, while learning the ideals of PBL. This has shown to be the most successful of the techniques. The third technique, in which each section of subject matter is taught and tested utilizing PBL, allows the student full understanding of a concept or theory prior to moving on to the next subject. A drawback of this technique is a disconnect in the continuity of the material and does not allow the student to blend ideas into a unique philosophy. Teaching subjects individually does not allow for a holistic approach to the healing process for the student.

As a physical therapy student gains experience through completed internships or affiliations in different settings of the profession, an understanding of material as it relates at a practical level becomes apparent. Practical learning occurs through experiences of repetitive usage with professionals in the field. The student is allowed to see how a professional employs similar techniques to those taught during academic times and makes changes to allow for personal philosophies or through the trial and error process. Corrections that have been made by the professional shed light on what has worked and what not to do in different situations through experience.

Chapter 3

Methodology

3.1 Purpose

The purpose of this study was to examine the perceptions of newly certified athletic trainers (ATs) regarding the development and integration of their athletic training skills in their athletic training education program; specifically, the instruction of clinical skills, interpersonal skills and professional personal development as identified in the Commission on Accreditation of Athletic Training Education (CAATE) standards. Along with determining the level of development and integration of their skills, a determination of the level of importance of the classroom, laboratory and field settings in their educational growth was assessed.

3.2 Research Design

This study was a one-time non-experimental survey. The independent variables are the sex, age, race/ethnicity, institution of education, highest level of education, and current employment setting. The dependent variables are level of perceived competence in CAATE skills, interpersonal skills and professional development skills.

3.3 Participants

The participants in this study are ATs that have completed their athletic training education requirements in a CAATE approved athletic training education program. These participants have successfully completed the national certification exam set forth by the BOC within the previous 18 months of completing the survey. Participants were allowed to leave the survey at anytime and/or skip questions without penalty to them or their previously answered

questions. Participants were recruited through an invitation electronic mailing list provided by the National Athletic Trainers' Association (NATA). This list was generated with the specific parameters that the person be a member of the NATA and had completed the BOC exam within 18 months prior to the survey being administered.

3.4 Instrumentation

3.4.1. Demographic Survey

The information collected for this study was anonymous in nature as the subject did not have to input name, place of employment or specific program of completion for their undergraduate studies. Demographic information included questions pertaining to sex, age, race, NATA district, level of education, i.e. Bachelors or entry-level Masters Degree, months certified, and current employment setting (i.e. corporate, industrial, clinical, high school, collegiate).

3.4.2. Survey of Level of Development and Implementation of Skills

A self-administered 35-item survey was utilized on a 5-point Likert Scale to determine the level of development and integration of the education that a subject has encountered with the topic at hand. The questions posed in the survey did not utilize the complete list of competencies put forth by CAATE, but were specifically identified by the researcher as skills necessary for success in the profession. The questions were categorized into either 1) the general CAATE competencies, 2) interpersonal development, or 3) professional personal development. The general CAATE competencies were taken directly from the current standards (5th Edition Competencies) in place for athletic training students' requirements for graduation from an accredited CAATE athletic training education program (CAATE.net). The interpersonal skills were CAATE competencies developed from situations in which the practicing AT had interacted with others in the medical field, coaching and administrative staffs, injured athletes and persons

significant to the injured athlete. The majority of the professional personal development questions were CAATE competencies that relate to the AT as a person and not care giving. However, a few questions had been derived from research that has studied obstacles within the profession of athletic training that relate directly to the AT, including burnout, work/family conflict and life balance (Winterstein, 1998; Hendrix, 2000; Mazerolle 2008a; Mazerolle, 2008b; Mazerolle, 2008c; Reed, 2004).

The 5-point Likert Scale ranges from 0, not introduced in AT education, to 5, learned in the classroom, practiced in the laboratory setting and allowed to utilize in a real life setting with an actual patient. These responses were determined on a continuum basis in accordance with the CAATE standards in which learning over time is to be utilized. The material was to be presented the skills in the classroom, allowed to practice said skills in the laboratory setting and then applied in field experiences where applicable. The subjects' responses allowed for analysis of how in-depth the level of development and implementation of a skill was achieved in the athletic training education program.

Following the completion of the mastery development and implementation portion, the subject was then to rate the different educational environments on their level of importance during the education process for that specific competency. The subject was allowed to respond individually to the importance of the classroom, theoretical scenarios in the laboratory setting and the field experience with a response of no importance (1), low importance (2), moderate importance (3), high importance (4) and most important (5).

Following the completion of these questions, association of the results occurred by combining the two responses to understand a sense of the subjects' development and

implementation of a skill and what educational setting had the highest level of importance for that skill.

3.5 Data Collection and Management

Responses to the survey were tabulated utilizing the survey engine website, SurveyMonkey.com, and were transferred for analyzing through Microsoft Excel spreadsheets and SPSS software (Version 17.0, IBM Inc.). The link to the survey was distributed by the NATA via electronic mail (e-mail) to 1780 participants in the “certified” category that meet the study inclusion criteria. The e-mail correspondence sent to participants included an explanation of the study (Appendix C). Those completing the survey gave implied consent to participate. Subjects were able to discontinue the survey or skip questions at any point they deem necessary without penalty. Because of the nature of SurveyMonkey.com, the instrument was available 24-hours per day for the 6 -week testing period. A 6-week period was determined as ample time for each individual to complete the study. A reminder was emailed to them for two 2-week cycles following the initial invitation email. The results of the survey were kept within the website and downloaded and analyzed by the researcher at anytime for review.

Data recorded on the SurveyMonkey.com website were anonymous and password protected so that there were no participant identifiers. Any data that was downloaded and analyzed outside of the website was kept on a password protected computer or on hard copies that placed in a locked file cabinet in the researcher’s office.

3.6 Data Analysis

Demographic data was summarized using descriptive data. The completed results of the survey were analyzed on an individual question basis within each of the three categories (1.

General CAATE competency, 2. Interpersonal Skill, 3. Professional development). This allowed for specific analysis of the competency and its understanding and level of educational importance by the participant. The totals for each answer to the specific question were represented as a percentage of the total answers for that question. The statistical significance level were set at $p < .05$. Data analyzed using the Statistical Package for the Social Sciences (SPSS) 21.0 software.

The following research questions were analyzed for significance:

1. What are the perceptions of recently certified ATs regarding development and integration of the:
 - a. General CAATE athletic training skills
 - b. Interpersonal Skills
 - c. Professional Personal Development Skills
2. Does graduating class size affect the perceived instruction in general CAATE skills?
3. Does level (NCAA division I-III or NAIA) of athletic program affect perceived instruction in general CAATE skills
4. Do field experiences within the athletic training education of newly certified ATs play a significant role in the instruction of general CAATE athletic training competencies?
5. Do field experiences within the athletic training education of newly certified ATs play a significant role in the instruction of interpersonal skills within the field of athletic training?

6. Do field experiences within the athletic training education of newly certified ATs play a significant role in the instruction of how to cope with the demands of the profession?

Each of the research questions were analyzed independently of one another utilizing different statistical methods. Research question 1 utilized descriptive statistics to determine perceived level of competency in each category. Research question 2 utilized a Pearson correlation analysis procedure in order to determine level of perceived competency in comparison to class size. Research question 3 utilized a univariate ANOVA to determine the relationship between level of perceived competency in general CAATE skills and NCAA division.

Chapter 4

Results

4.1 Overview

The purpose of this study was to examine the perceptions of newly certified athletic trainers (ATs) regarding the development and integration of their athletic training skills in their athletic training education program; specifically, the instruction of clinical skills, interpersonal skills and professional personal development as identified in the Commission on Accreditation of Athletic Training Education (CAATE) standards. Along with determining the level of development and integration of their skills, participants were asked to identify the level of importance of the classroom, laboratory and field settings in their educational growth.

4.2 Demographic Data

An electronically mailed invitation to participate in the study was sent to 1,780 ATs who were certified during the previous 18 months. One hundred and fifty-four respondents completed the entire survey, for a response rate of 8.65%. Females comprised 66.9% of the responses, for a total of 103 people. Males comprised 33.1% of the cohort with a total number of 51 respondents. One person did not respond to the gender question. The average age of the participants was 23.62 years of age (± 2.04 years). The youngest respondent was 22 and the oldest was 36 years of age. Participants ranged in months of certification from 1 month to 18 months, with an average of 11.68 months of being certified. The majority of subjects responding to the study characterize themselves as Caucasian (91.6%). Table 4.1 summarizes the responses of ethnicity to the study.

Table 4.1 *Frequency Distribution of Participants by Ethnicity*

Ethnicity	Respondents	Percent
Caucasian	141	91.6%
Latinos	7	4.5
African American/Black	2	1.3
Asian	1	0.6
American Indian/Alaskan Native	0	0.0
Other	3	1.9

Over half of the participants completed their undergraduate education at an NCAA Division I institution (56.4%). The representation from undergraduate institutions attended based on collegiate divisions (e.g. NCAA division I-III, NAIA), is represented in Table 4.2.

Table 4.2 *Frequency Distribution of Participants by Division of Competition of Undergraduate Education Institution*

NCAA Division	N	Percent
I	91	59.1
II	24	15.6
III	32	20.8
NAIA	7	4.5
Total	154	100

The NATA divides North America into ten different districts based upon their regional location. This was developed so that each region could not only interact with its membership, but also provide adequate representation at the national level. The division of the district representation showed that District 4 had the most participants (30.5%), while District 6 and District 10 had the least responses (3.2%). Table 4.3 indicates the NATA districts represented.

Table 4.3 NATA Districts Represented by Participants

District	N	Percent
District One (CT, ME, MA, NH, RI, VT, Quebec, New Brunswick, Nova Scotia)	12	7.8%
District Two (DE, NJ, NY, PA)	18	11.7
District Three (DC, MD, NC, SC, VA, WV)	16	10.4
District Four (IL, IN, MI, MN, OH, WI, Manitoba, Ontario)	47	30.5
District Five (IA, KS, MO, NE, ND, OK, SD)	19	12.3
District Six (TX, AR)	5	3.2
District Seven (AZ, CO, NM, UT, WY)	9	5.8
District Eight (CA, NV, HI, Guam)	13	8.4
District Nine (AL, FL, GA, KY, LA, MS, TN, Puerto Rico, Virgin Islands)	10	6.5
District Ten (AK, ID, MT, OR, WA, Alberta, British Columbia, Saskatchewan)	5	3.2
Total	154	100

The majority of the participants completed their athletic training education through an undergraduate curriculum (98.1%, N=151), while two participants (1.3%) completed their athletic training education through an entry-level masters program and one respondent (0.7%) did not answer.

The current employment setting showed most participants worked in the College NCAA-Division I (36.4%) and the High School setting (22.1%). The remaining settings are summarized in Table 4.4.

Table 4.4 *Current Employment Settings of Participants*

Current Setting	N	Percent
High School	34	22.1%
Hospital/clinic	13	8.4
Dual Role	7	4.5
Industrial/corporate wellness	3	1.9
Collegiate NCAA- Division I	56	36.4
Collegiate NCAA-Division II	9	5.8
Collegiate NCAA-Division III	7	4.5
Collegiate NAIA	0	0
Junior/Community College (NJCAA)	4	2.6
Other	21	13.6
Total	154	100

4.3 Perceptions regarding development and integration of specified skills evaluated

The skills evaluated in this survey were divided into three specific categories; general athletic training skills, interpersonal skills and professional personal development skills as mandated by CAATE. The results below identify the cumulative participant responses for all of the questions in each the specific category. In the following tables, the participant responses in each of the groups are aggregated in order to create a general understanding of the frequency of responses for the questions in each of the three categories (general skills, interpersonal skills, and professional personal development skills). These frequencies indicate the perceptions of newly certified ATs development and integration of skills assessed.

4.3.1 General CAATE athletic training skills

The general CAATE standards identified for the development of athletic training skills are represented in questions 1-17 of the survey (Q10-Q43 via surveymonkey.com, Appendix A). A few examples of these skills include orthopedic evaluation of injuries, designing therapeutic

interventions, and application of appropriate protective devices. Table 4.5 shows the total responses of the cohort regarding participants' perceptions of where their skills were developed and integrated into their current ability level. In order to gain a general understanding of the cohort's level of development and integration, the total response scores were calculated, however a complete list of individual responses can be found in Appendix B. The results show that the majority of participants (52.9%) reported the level of development and integration of their general CAATE skills was "In the classroom setting." The second most common response (20.1%) for the general CAATE skills was "With actual patients in the athletic training room," followed closely behind with 17.2% choosing "With theoretical patients in the laboratory setting." When further examining the questions in this category individually, multiple questions were seen to have an overwhelming response to "In the classroom setting." For example, CAATE Standard HA-1: "describe the role of the athletic trainer and the delivery of athletic training services within the context of the broader healthcare system," had a response rate of 80.5% (124 out of 154 responses) as "In the classroom setting."

Table 4.5 *Aggregate Count of Responses for Perceived Development and Integration of the General CAATE Skills*

Response	N	Percent
Not introduced in athletic training education	61	1.7%
In the classroom setting	1882	52.9
With theoretical patients in the laboratory setting	612	17.2
With actual patients in the athletic training room/clinic	717	20.1
With actual patients in field experiences	288	8.1
Total	3560	100

4.3.2 Interpersonal Skills

The development and integration of Interpersonal skills represent questions 18-24 of the survey (Q44-57 via surveymonkey.com, Appendix A). This category includes development of

skills necessary to instruct patients in home care of injuries as well as the dangers and the need for prevention of sport related injuries to athletes. Table 4.6 shows the response pattern for the 7 questions and where the participants felt these skills were developed and integrated in the education process. Response to each of the individual questions are found in Appendix B. Similar to the responses for the general CAATE skills, the most common response for the development and integration of Interpersonal skills (49.3%) was “In the classroom setting.” The second most common response (25.6%) was “With actual patients in the athletic training room/clinic. Upon individual analysis of questions in this category, many of the responses showed a high rate of response of “In the classroom setting.” For example, CAATE Standard PD-11, “Identify strategies to educate colleagues, students, patients, the public, and other healthcare professionals about the roles, responsibilities, academic preparation, and scope of practice of athletic trainers” had a response rate of 68.2% (105 out of 154 responses) “In the classroom setting,” while the next most frequent response was “With actual patients in the field” having a response rate of 12.3%.

Table 4.6 *Aggregate Count of Responses for Perceived Development and Integration of Interpersonal Skills by Participants*

Response	N	Percent
Not introduced in athletic training education	59	4.6
In the classroom setting	639	49.3
With theoretical patients in the laboratory setting	120	9.3
With actual patients in the athletic training room/clinic	332	25.6
With actual patients in field experiences	145	11.2
Total	1295	100

4.3.3 Professional Personal Development Skills

The development and integration of the participants' professional personal development skills include questions 25 through 35 of the survey (Q58-70 via surveymonkey.com, Appendix A). These skills include developing a long-term plan for success in the field of athletic training as well as being able to utilize current research to develop a plan of treatment for an athlete. Table 4.7 shows the response pattern indicating where the participants felt these skills were developed and integrated in the education process. A complete list of individual responses to questions in this category is found in Appendix B. Similar to the previous categories, the majority of participants (44.8%) reported the level of development and integration of professional personal development skills was "In the classroom setting." In contrast to the previous two categories, the second most popular response (19.3%) was "With actual patients in the field experiences." This reflects the idea that outside of the classroom, participants that took this survey believe that the development and integration of their professional personal development skills came from field experiences in which they were able to interact with ATs practicing in the profession. When looking at the questions individually, "In the classroom setting" was a prevalent response, but the next most frequent response varied among the individual question. For example, CAATE Standard PD-7: "Perform a self-assessment of professional competence and create a professional development plan to maintain necessary credentials and promote life-long learning strategies" showed a response rate of 63% for "In the classroom setting," while the next most common response was "Not introduced in AT education" (16.9%). This shows that a large portion of participants had little or no discussion regarding the self-reflection of their career.

Table 4.7 *Aggregate Count of Responses for Perceived Development and Integration of Professional Personal Development Skills*

Response	N	Percent
Not introduced in athletic training education	233	11.8
In the classroom setting	885	44.8
With theoretical patients in the laboratory setting	123	6.2
With actual patients in the athletic training room/clinic	354	17.9
With actual patients in field experiences	380	19.3
Total	1975	100

4.4 Does graduating class size affect the development and integration of skills required for athletic training by CAATE?

This research question addressed the inquiry to determine if there is a correlation between development and integration of skills required for athletic training by CAATE and the relative size of the graduation class. The association between class size and development and integration of each of the required skills (general CAATE skills, Interpersonal skills, and Professional personal development) was determined utilizing an individual Pearson correlation test for each category. The results of the test for general CAATE skills showed that there was no statistical significance between class size and development and integration of skills in general CAATE skills ($r = -.107$, $p = .177$). This means that across the different class sizes reported by those in the completed survey cohort, there was no relationship between the number of students in the athletic training education graduating class and level of development and integration of the General CAATE Skills assessed in this survey. The results of the Pearson correlation test for the Interpersonal skills category showed that there was no statistically significant difference between class size and development and integration of Interpersonal skills ($r = -.142$, $p = .064$). Therefore, although closer to statistical significance than the General CAATE Skills, across the different class sizes reported by those in the completed survey cohort, there was no relationship

between the number of students in the athletic training education graduating class and level of development and integration of the Interpersonal skills assessed in this survey. The results of the test for Professional personal development showed that there was no statistically significant difference between class size and development and integration of Professional Personal Development ($r = .022$, $p = .774$). Similar to the data in the previous categories, regardless of class size, ATs perceive comprehension of the Professional Personal Development skills similarly.

4.5 Does level (e.g. NCAA division I-III or NAIA) of athletic training education program affect development and integration of skills required for athletic training by CAATE

This research question addressed the development and integration of general CAATE athletic training skills and NCAA division of competition of undergraduate education institution. In order to determine if there was any statistical significance between the two factors, a univariate ANOVA was run on the mean level of importance for the educational settings. This revealed no statistically significant difference between the classroom setting and NCAA division of competition of undergraduate education institution ($F = .023$, $p = .995$), between the laboratory setting and NCAA division of competition of undergraduate education institution ($F = .838$, $p = .475$), or between the field setting and NCAA division of competition of undergraduate education institution ($F = .797$, $p = .498$). Each educational setting was individualized to determine mean level of importance for each division of educational setting. Table 4.8 identifies the mean level of importance of the classroom setting by NCAA Division.

Table 4.8 *Count and Mean Level of Importance of Classroom Setting by Division*

Division	N	Mean Level of Importance	Std. Deviation
NCAA Division I	91	3.85	.48
NCAA Division II	23	3.83	.54
NCAA Division III	30	3.83	.53
NAIA	7	3.87	.39

The majority of responses for division are from NCAA Division I (n=91) with the least amount of responses from the NAIA (N=7). Table 4.9 identifies the mean level of importance of laboratory setting by NCAA division.

Table 4.9 *Count and Mean Level of Importance of Laboratory Setting by NCAA Division*

Division	N	Mean Level of importance	Std. Deviation
NCAA Division I	89	3.63	.61
NCAA Division II	22	3.59	.64
NCAA Division III	30	3.71	.57
NAIA	7	3.32	.60

Similar to the classroom setting responses, the majority of responses (N=89) came from the NCAA Division I setting. Table 4.10 identifies the mean level of importance of the field setting by NCAA division. As can be seen below, the mean level of importance for each division is higher for the field setting than the classroom or laboratory setting.

Table 4.10 *Count and Mean Level of Importance of Field Setting by NCAA Division*

Division	N	Mean Level of Importance	Std. Deviation
NCAA Division I	89	4.15	.62
NCAA Division II	23	4.05	.67
NCAA Division III	30	3.95	.63
NAIA	7	4.10	.48

4.6 Do field experiences within the athletic training education of participants play an important role in the instruction of general CAATE athletic training competencies?

In order to determine a response to this research question, the sum of all scores for the level of importance of each of the educational settings was compiled. The Skills Development and Integration (SDI) is a mean of the subjects' responses to level of importance for each of the educational settings for athletic training education and can be seen in Table 4.11. The score is based off a total of 5 points; 1 point equates to no importance while 5 points equates to most important educational setting.

Table 4.11 *The Average CAATE Skills Development and Integration (SDI) score for each of the Educational Settings*

Educational Setting	Aggregate Score	Std. Deviation
Classroom Setting	3.84	.49
Laboratory Setting	3.64	.61
Field Setting	4.09	.62

Within the SDI, the Field Setting (4.09) displayed the strongest mean level of importance as reported by the subjects that completed the survey. The Classroom Setting (3.84) displayed a mean level of importance higher than the Laboratory Setting (3.64), but less than the Field Setting. This indicates that ATs perceive that the field setting, and therefore field experiences, plays an important role in the development and integration of general CAATE skills during their

athletic training education. In order to further evaluate the data, each individual question was analyzed for mean level of importance according to the specific response made and can be found in Appendix B.

4.7 Do field experiences within the athletic training education of participants play an important role in the instruction of interpersonal skills within the field of athletic training?

In order to determine a response to this research question, the sum of all scores for the level of importance of each of the educational settings was compiled. The Interpersonal Skills Development and Integration (ISDI) is an average mean of the subjects' responses to level of importance for each of the educational settings for athletic training education and can be seen in Table 4.12. The score is based off a total of 5 points; 1 point equates to no importance while 5 points equates to most important educational setting.

Table 4.12 *The Average Interpersonal Skills Development and Integration (ISDI) score for each of the Educational Settings*

Educational Setting	Aggregate Score	Std. Deviation
Classroom Setting	3.65	.60
Laboratory Setting	3.38	.75
Field Setting	4.08	.60

Within the ISDI, the Field Setting (4.08) displayed the strongest mean level of importance as reported by the subjects that completed the survey. The Classroom Setting (3.65) displayed a mean level of importance higher than the Laboratory Setting (3.38), but less than the Field Setting. The ISDI score is similar in response to the SDI score for mean level of importance. The Laboratory Setting in the Interpersonal Skills section is lower (3.38) than in the General CAATE Skills section (3.64). This means that participants perceive that the field setting, and therefore field experiences, plays an important role in the development and integration of

Interpersonal skills during their athletic training education. In order to further evaluate the data, each individual question was analyzed for mean level of importance according to the specific response made and can be found in Appendix B.

4.8 Do field experiences within the athletic training education of newly certified ATs play an important role in the instruction of how to cope with the demands of the profession?

In order to determine research question eight, the sum of all scores for the level of importance of each of the educational settings was compiled. The Professional Personal Development skills (PPDI) is an average mean of the subjects' responses to level of importance for each of the educational settings for athletic training education and can be seen in Table 4.13. The score is based on a total of 5 points; 1 point equates to no importance while 5 points equates to most important educational setting.

Table 4.13 *The Average Professional Personal Development Skills Development and Integration (PPDI) score for each of the Educational Settings*

Educational Setting	Aggregate Score	Std. Deviation
Classroom Setting	3.42	.69
Laboratory Setting	2.94	.83
Field Setting	3.86	.74

Within the PPDI, the Field Setting (3.86) displayed the strongest mean level of importance as reported by the subjects that completed the survey. The Classroom Setting (3.42) displayed a mean level of importance higher than the Laboratory Setting (2.94), but less than the Field Setting. This means that participants perceive that the field setting, and therefore field experiences, plays an important role in the development and integration of Professional Personal Development skills during their athletic training education. In order to further evaluate the data,

each individual question was analyzed for mean level of importance according to the specific response made. The results of each individual question are found in Appendix B.

4.9 Summary

To summarize the responses of the research questions, the majority of subjects feel that they are developing and implementing their general CAATE skills, Interpersonal skills, and Professional Personal Development skills in the classroom setting. Subjects perceive their instruction of the three different skills categories similarly regardless of class size and there is no association between collegiate division of competition of undergraduate education and perceived level of instruction for the general CAATE skills. Subjects do feel that their field experiences have a higher level of importance in their education than the classroom setting and the laboratory setting.

Chapter 5

Discussion

5.1 Summary of Research Questions

This study focused on the assessment of the perceived educational preparation of recently certified athletic trainers (ATs) certified in their athletic training education programs. The study examined the level of development and integration of general CAATE skills, interpersonal skills, and professional personal skills as directed by Commission on Accrediting Athletic Training Education (CAATE). Participants were asked to identify the specific educational settings associated with the learning over time continuum during their undergraduate education and to rate the relative importance of the classroom, laboratory and field experiences in their preparation for athletic training.

The importance of each of the categories investigated (General CAATE skills, interpersonal skills, professional personal development skills) is that they are essential to the success of an AT. The general CAATE skills include orthopedic skills such as evaluation of musculoskeletal injuries, treatments of a myriad of injuries as well as performing rehabilitation for those injuries so the patient can return to normal function. Skills that are an absolute for aiding patients as well as successful completion of the national certification exam administered by the Board of Certification (BOC).

Athletic training is a service-based profession in which the AT deals with people as patients, colleagues, parents, coaches and administrators. They have to be able to interact with patients to determine the appropriate needs, converse with other healthcare professionals in order

to help facilitate the appropriate care of patients and finally, ATs need to be able to express themselves to coaching staff members as well as significant others associated with the patient, such as parents, spouses and other family members. In order to do this, a base set of interpersonal skills must be established. Most recently, CAATE has incorporated new competencies that address some of the interpersonal skill development needs (CAATE.net).

Finally, in order for an AT to be successful, they need to be able to cope with the demands of the profession adequately. This includes being able to balance work life and personal life, minimize burnout in the profession and appropriately promote the profession. Mazerolle (2008a, b, and c) has documented a high incidence of burnout in the field of athletic training due to different factors that need to be addressed during an ATs education in order to be minimized. If awareness is raised, then solutions can be found to minimize the likelihood of occurrence.

The first research question identifies participants' perceptions of the process by which they were able to develop and integrate professional skills in the three categories (i.e., general CAATE skills, interpersonal skills and professional personal development skills). According to CAATE standards (CAATE.net), the student is to have an opportunity to learn their skills didactically in the classroom, practice them in the laboratory setting and finally be able to put them to use in the field setting.

The findings from the current study for each of the three categories (i.e., general CAATE skills, interpersonal skills, professional development) indicate that the majority of the respondents felt that they best developed and integrated their skills in what CAATE identifies as the first step in learning over time or "in the classroom setting." This does not mean that the skill

was not addressed in the other educational settings; it simply means that ATs perceived they gained the best grasp of the material in the classroom. The second most common response for the general CAATE skills and the interpersonal skills was “With actual patients in the athletic training room/clinic.” This seems to indicate that participants felt they had the opportunity to further develop the base knowledge learned in the classroom with actual patients under the direct supervision of a preceptor without the high pressure of being in the field. In this type of setting, the pressure for return to play is not as prevalent, as the majority of the time the evaluations and treatments/rehabilitations are not in the public eye and have less stress associated with them when compared to competition situations. In contrast, the professional personal skills development and integration identified “With actual patients in field experiences” as a strong aspect of their program. This indicates that outside of the classroom setting, athletic training students are learning the skills necessary to cope with the demands of the profession in the actual field settings of athletic training. Bandura’s theory of sociocultural learning, in which a student’s education is based on the process of observational learning in the environment, lends insight into these results (Bandura, 1986). ATs are utilizing a base knowledge they have acquired in the classroom and/or laboratory setting and have the opportunity to develop and integrate the specific skill more completely through experiences and observations in the field. This may include dealing with return to play issues addressed during competitions, as well as interacting with coaches, athletes and healthcare professionals in a situation when timing is essential.

The association of class size and perceived competency was the focus of research question four. The question addressed the anecdotal concept that smaller class sizes would increase instructor and student interaction and therefore more opportunity to comprehend the material presented. This rationale was based off the self-efficacy motivation theory that allows

the learner to feel more confident in comprehending the skills taught when the instructor makes the learner feel indispensable in the learning process (Biddle, 1999). A large, highly populated classroom does not allow for equal interaction of the instructor with the individual students. Consequently, the student does not feel a sense of worth in the class and is therefore less engaged as an active learner. Within the self-efficacy motivation theory is the concept of the sociocultural learning theory in which learners need to interact with their peers in order to better understand the material and maintain a sense of interest in the learning process (Vygotsky, 1978). A large class size allows for less complete interaction of the students and their instructors, and therefore less interest in the learning process. The results of this research question were inconclusive for various reasons. The first reason was that there was an error in comprehension of the question. Multiple subjects in the study reported class sizes larger than designated on any athletic training education website. CAATE requires that all athletic training education programs designate how many students are enrolled in each level of the program on their website and none of the programs researched showed numbers greater than 30 students. Sixteen of the respondents reported a number higher than 30 and were consequently not included in data analysis. Even with these respondents removed from the data, there was no statistically significant difference found between class size and perceived competency in the skills. This means that regardless of class size, athletic training students perceive they are getting a similar education of the base standards required to pass the certification exam and be a successful athletic trainer. CAATE is striving to create an equal opportunity of education for all athletic training students regardless of institution attended, and according to the findings of this study, is successfully achieving this goal.

Research question five refers to the level of athletic competition of undergraduate institutions attended by newly certified athletic trainers and their level of perception of the general CAATE skills. The reason that level of athletic competition was utilized as an identifier was because there is a direct association between institution size and level of competition. Typically, a large institution participates in the NCAA Division I and possibly Division II, while the smaller institutions participate in the NCAA division III or NAIA. When comparing the different educational settings across individual divisions of competition, there were no statistical significance between Divisions I, II, III and NAIA. Thus, the relative level of importance for each of the educational settings for the general CAATE skills for each of the collegiate divisions of competition was similar across all levels. According to the results, regardless of division of competition, ATs perceive a similar level of development and integration of skills in the classroom, laboratory and field portions of their education required to become a certified athletic trainer in the classroom, the laboratory and the field. Along with the different levels of competition, many times there are different opportunities for care for the athletes participating in collegiate athletics. Different levels of care include medical staff present to help in an emergency situation, diagnostic equipment available during these emergency situations and medical equipment available to aid in the emergency situation. Therefore, an athletic training student may have the opportunity to utilize the equipment and become more comfortable with different treatments as they are more readily available. Conversely, an athletic training student may become more comfortable with their athletic training skills if there are no other resources available to them. For example, a school with fewer resources may not have bracing equipment readily available and the athletic training student is required to depend on taping skills to appropriately support an injured athlete. The findings of this study support the notion that ATs

perceived they are getting equal opportunities for development and integration of their skills in all educational settings regardless of level of competition.

The final three research questions examined the importance of the field experiences on the development of skills in each of the three categories (i.e., general CAATE skills, interpersonal skills, and professional personal development skills) in the current athletic training curriculum. In each of the three categories, the field experience had a higher relative level of importance than the classroom and the laboratory settings. This means that respondents are recognizing the field setting as an important educational setting for the development of skills in athletic training. In the past, during the apprenticeship phase of athletic training education, the field setting was important to students as they were able to learn in real life situations and gain experience through trial and error (Delforge, 1999). Hundersmarck (2005) noted a similar response in the law enforcement profession by cadets who had recently graduated from the police academy. Similarly, medical students were given an opportunity to experience emergency medical services during their residency and felt they learned more about emergency techniques on the scene than in the classroom (Stewart, 1987). This study's findings suggest that even though educators speculate that athletic training is becoming a more academic field in which students aren't receiving hands on training required for success, the respondents perceive their field experiences as an important educational setting in their training. According to Lawson (1983b), the field experience is a part of the professional socialization phase of a student's athletic training career. This is the time in which the values, attitudes and norms of behavior are introduced and developed within the student (Hayden, 1995). Winterstein (1998) also believes this is the place and time in an athletic training student's career in which the development of

these characteristics can either enhance or hinder a student's perspective of athletic training career and be catalyst for job dissatisfaction and burnout in the profession.

In summary, newly certified ATs perceive the development and integration of the different skills assessed comes mainly "in the classroom setting" with the athletic training room/clinic secondary for the general skills and interpersonal skills. On the other hand, the professional development skills and coping with the demands of the profession, the primary setting is in the classroom, while the secondary setting is in the field with practicing preceptors. The experiences of the preceptors have lead to the opportunity to establish themselves in the athletic training profession and lend that experience and understanding to the athletic training student as they are faced with the demands of the profession.

Regardless of the class and institution size of the undergraduate athletic training education program, ATs report a similar base level of education. A goal of CAATE is to allow all athletic training students the same opportunity for learning skills necessary to successfully pass the certification exam and practice in the field regardless of the college setting, geographical location or curricular design in which develop their professional skills. According to the results of this study, these goals are being met.

Prior to the termination of the apprenticeship program, field experiences played an important role in the development of skills of an athletic training student. The results of this study indicate that ATs still place a high level of importance on the experiences in the field over the classroom and laboratory setting. As the profession of athletic training continues to evolve, administrators will need to understand the importance of the field setting and maintain its presence in the athletic training education process. This may mean that students are gaining

exposure to concepts in the classroom that are unfamiliar to them, however, they are placing a high level of importance on the field experience to gain a stronger grasp on the concepts introduced in the classroom.

5.2 Limitations to the study

There are several limitations to this study that need to be addressed. First, this study utilized selected competencies from the CAATE standards represented within the most recent guidelines (CAATE, 2012). The competencies chosen were derived from a theory by the researchers of this study that spanned from the global tasks that all athletic trainers must be able to implement and were specific tasks selected for each research category. Further research may include a different sampling if not the entire list of competencies to determine alternate details.

The next limitation of this study was the fact that there was a small sample size as well as incomplete data from participants. The survey consisted of 79 questions, which included the demographics section and 35 specific competencies. A number of respondents of the survey did not complete every question. This may be because the survey was too lengthy or that the participant did not want to honestly answer the question, possibly skewing the data. Future research may want to shorten the questionnaire and examine specific factors instead of generalizing and conducting research on these three factors.

An additional limitation of this study is that the participants self reported how they felt about specific topics and their own perception of development of skills. Even though the survey included only ATs that received certification within the previous 18 months, there could be discrepancies in their memory of education while answering the questions. Participants may

have perceived their skills are high when their preceptors perceive a different a standard. Future research may include a follow up survey to their respective supervisor and or program director.

5.3 Future Research

This study examined the level of development and integration of different skill competencies identified as essential for members of the athletic training profession. Now that a base knowledge of development and integration of CAATE skills, interpersonal skills and professional development has been cited, there are a few concepts that could be further investigated to continue to ensure appropriate and adequate knowledge within the profession. Future research could include more qualitative data that would include information coming from the recently certified AT's supervisors. Many times, a person may feel that they are adequate in their knowledge, but there could be a discrepancy as to exactly what is being done. If a practicing AT is unaware of newer or advanced techniques that provide better results in their evaluation or rehabilitation, they may not know they aren't reaching their highest level of potential. This would give the recently certified AT a false sense of confidence and therefore skew their perspective.

Further research could focus more on the educational side of AT. One of the first avenues that could be researched is the level of satisfaction that a recently certified AT has on their education and its efficacy. Now that they are practicing in the field, do they feel that their education prepared them adequately for the demands? This question was not asked in the current research, but may have impacted the reasoning behind responses that showed inconsistencies through the survey responses.

Finally, future research could include a follow up study with respondents who have been certified for a longer period. For example, do their perspectives on their education change as they are in the profession longer? Do they specialize into different facets of AT that may diminish their general knowledge but enhance specific aspects of healthcare? These are questions that should be asked in future research to enhance our understanding of athletic training education.

5.4 Summary

The main goal of the Commission on the Accreditation of Athletic Training Education (CAATE) is to create competent professionals regardless of institution attended. Individuals wishing to become athletic trainers in the profession can attend an accredited program and know that they will receive a quality education. The difficulty in creating a baseline education that any person can be successful in is that everyone has different styles of learning and comprehending the material. Some individuals are verbal learners, while others may be hands on learners, and finally some may learn just by listening to the information presented. According to the data in this study, participants place a high amount of value in the development and integration of their skills in the classroom. Those that felt the classroom wasn't as important placed value in the development and integration of their skills in the field experiences whether in the laboratory setting or in the field under direct supervision of the preceptors. This means that no matter what type of learner a person is, the CAATE has created a model of athletic training education that encompasses the different learning styles while allowing the athletic training student many opportunities to understand the information through learning over time.

APPENDICES

Appendix A

Survey of Development and Implementation of Skills of Recently Certified Athletic Trainers

Appendix A represents the questions that were included in the online version of the survey. The demographics portion of the survey was completed utilizing a screen that scrolled downward in order to complete every question contained in that section. When respondents continued on to the competency portion of the survey, they were unaware of the different sections (General CAATE Skills, Interpersonal Skills, and Professional Personal Development Skills). Each specific competency was described at the top of its own individual page with the corresponding questions (Educational Setting and Level of Importance) below. When the respondent finished that competency, they were instructed at the bottom of the screen to proceed to the next page, which contained another competency and questions until they completed the final question.

Figure A1.1 *Welcome Page of Survey*

Athletic Training Education Curriculum: A survey of perceived competency

Clinical Instruction Settings in Athletic Training

Hello!!

Thank you for volunteering your time to complete this survey. In order to be most efficient with your time, there are a couple of suggestions below.

1. Hit the maximize button in the upper right corner of this window to allow the survey to encompass the entire screen. This will allow you to complete the survey without having to scroll up or down after the demographics section has been completed.
2. At the top of each page is the standard being discussed. The questions on the page deal with that standard only.
3. Once you have completed each of the questions for the standard, hit the next button at the bottom of the screen and continue until you have completed the final question.

Again, thank you for taking the time to complete this survey. Your input will help maintain a high level of success in athletic training education.

Figure A1.2 *Demographics Questions*

Athletic Training Education Curriculum: A survey of perceived competency	
Demographics	
1. Gender	
☐ Female	
☐ Male	
2. Please state your current age	
3. Total number of months as a certified athletic trainer (AT)	
4. Please indicate your race/ethnicity	
☐ African American/Black	
☐ Asian	
☐ American Indian or Alaska Native	
☐ Caucasian	
☐ Latino	
☐ Pacific Islander	
☐ Other	
5. NCAA division of UNDERGRADUATE institution completed to become an AT	
☐ Division I	
☐ Division II	
☐ Division III	
☐ NAIA	
☐ Other	
6. Please state the total (or approximate) number of students in your graduating class.	

Figure A1.3 Athletic Training Demographics Questions

Athletic Training Education Curriculum: A survey of perceived competency

7. NATA district of institution completed to become an AT

- ☐ District 1 (CT, ME, MA, NH, RI, VT, Quebec, New Brunswick, Nova Scotia)
- ☐ District 2 (DE, NJ, NY, PA)
- ☐ District 3 (DC, MD, NC, SC, VA, WV)
- ☐ District 4 (IL, IN, MI, MN, OH, WI, Manitoba, Ontario)
- ☐ District 5 (IA, KS, MO, NE, ND, OK, SD)
- ☐ District 6 (TX, AR)
- ☐ District 7 (AZ, CO, NM, UT, WY)
- ☐ District 8 (CA, NV, HI, Guam)
- ☐ District 9 (AL, FL, GA, KY, LA, MS, TN, Puerto Rico, Virgin Islands)
- ☐ District 10 (AK, ID, MT, OR, WA, Alberta, British Columbia, Saskatchewan)

8. Athletic Training Education Program level completed

- ☐ Undergraduate Curriculum
- ☐ Entry-level Graduate Program

9. Current primary athletic training setting

- ☐ High School
- ☐ Hospital/clinic
- ☐ Dual role
- ☐ Industrial/corporate wellness
- ☐ Military
- ☐ Collegiate NCAA division I
- ☐ Collegiate NCAA division II
- ☐ Collegiate NCAA division III
- ☐ Collegiate NAIA
- ☐ Junior/Community College (NJCAA)
- ☐ Other

Figure A1.4 *Instructions of Survey*

Athletic Training Education Curriculum: A survey of perceived competency	
Instructions	
Instructions: Specific CAATE standards are being identified on the following pages. Following each specific standard is a set of 2 questions relating to that standard. Each question requires an answer that coincides with your athletic training education. Please answer the questions that relate to the standard to the best of your perception. The first question identifies your experiences with the integration of CAATE standards for clinical education during your athletic training preparation. Please select the response that best describes your experience. The second question related to each CAATE standard identifies the setting that most influenced your athletic training preparation. Please rate each setting for the level of influence it had on your comprehension of the specific standard.	

Figure A1.5 CAATE Competency CE-20

Athletic Training Education Curriculum: A survey of perceived competency					
CAATE Mandated Proficiencies					
CAATE CE-20: "Use standard techniques and procedures for the clinical examination of common injuries, conditions, illnesses and diseases."					
10. In your opinion, which of the following educational settings best describes where the components of CAATE CE-20 were presented and integrated into your preparation for your current athletic training responsibilities.					
☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences					
11. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of utilizing CAATE CE-20.					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lecture in the classroom	☐	☐	☐	☐	☐
Clinical Proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field Experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.6 CAATE Competency CE-15

Athletic Training Education Curriculum: A survey of perceived competency																													
CAATE CE-15: "Demonstrate the ability to modify the diagnostic examination process according to the demands of the situation and patient responses."																													
12. In your opinion, which of the following educational settings best describes where the components of CAATE CE-15 were presented and integrated into your preparation for your current athletic training responsibilities. ☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences																													
13. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE CE-15. <table border="1"> <thead> <tr> <th></th> <th>No Importance</th> <th>Low Importance</th> <th>Moderate Importance</th> <th>High Importance</th> <th>Most Important</th> </tr> </thead> <tbody> <tr> <td>Lectures in the classroom</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Clinical proficiencies in the laboratory scenario setting</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Field experiences with supervision from Clinical Instructor</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> </tbody> </table>							No Importance	Low Importance	Moderate Importance	High Importance	Most Important	Lectures in the classroom	☐	☐	☐	☐	☐	Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐	Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐
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Lectures in the classroom	☐	☐	☐	☐	☐																								
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐																								
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐																								

Figure A1.7 CAATE Competency TI-11

Athletic Training Education Curriculum: A survey of perceived competency																													
CAATE TI-11: "Design therapeutic interventions to meet specific treatment goals."																													
14. In your opinion, which of the following educational settings best describes where the components of CAATE TI-11 were presented and integrated into your preparation for your current athletic training responsibilities. ☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences																													
15. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE TI-11. <table border="1"> <thead> <tr> <th></th> <th>No Importance</th> <th>Low Importance</th> <th>Moderate Importance</th> <th>High Importance</th> <th>Most Important</th> </tr> </thead> <tbody> <tr> <td>Lectures in the classroom</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Clinical proficiencies in the laboratory scenario setting</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Field experiences with supervision from Clinical Instructor</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> </tbody> </table>							No Importance	Low Importance	Moderate Importance	High Importance	Most Important	Lectures in the classroom	☐	☐	☐	☐	☐	Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐	Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important																								
Lectures in the classroom	☐	☐	☐	☐	☐																								
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐																								
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐																								

Figure A1.8 CAATE Competency TI-11a

Athletic Training Education Curriculum: A survey of perceived competency					
CAATE TI-11a: "Assess the patient to identify indications, contraindications, and precautions applicable to the intended intervention."					
16. In your opinion, which of the following educational settings best describes where the components of CAATE TI-11a were presented and integrated into your preparation for your current athletic training responsibilities.					
☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences					
17. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE TI-11a.					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.9 CAATE Competency TI-13

Athletic Training Education Curriculum: A survey of perceived competency					
CAATE TI-13: "Describe the relationship between the application of therapeutic modalities and the incorporation of active and passive exercise and/or manual therapies, including therapeutic massage, myofascial techniques, and muscle energy techniques."					
18. In your opinion, which of the following educational settings best describes where the components of CAATE TI-13 were presented and integrated into your preparation for your current athletic training responsibilities.					
☐ Not Introduced in athletic training education					
☐ In the classroom setting					
☐ With theoretical patients in the laboratory setting					
☐ With actual patients in the athletic training room/clinic					
☐ With actual patients in field experiences					
19. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE TI-13.					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.10 CAATE Competency CE-16

Athletic Training Education Curriculum: A survey of perceived competency																													
CAATE CE-16: "Recognize the signs and symptoms of catastrophic and emergent conditions and demonstrate appropriate referral decisions."																													
20. In your opinion, which of the following educational settings best describes where the components of CAATE CE-16 were presented and integrated into your preparation for your current athletic training responsibilities. ☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences																													
21. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE CE-16. <table border="1"> <thead> <tr> <th></th> <th>No Importance</th> <th>Low Importance</th> <th>Moderate Importance</th> <th>High Importance</th> <th>Most Important</th> </tr> </thead> <tbody> <tr> <td>Lectures in the classroom</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Clinical proficiencies in the laboratory scenario setting</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Field experiences with supervision from Clinical Instructor</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> </tbody> </table>							No Importance	Low Importance	Moderate Importance	High Importance	Most Important	Lectures in the classroom	☐	☐	☐	☐	☐	Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐	Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐
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Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐																								
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐																								

Figure A1.11 CAATE Competency PHP-23

Athletic Training Education Curriculum: A survey of perceived competency					
CAATE PHP-23: "Apply preventative taping and wrapping procedures, splints, braces and other special protective devices."					
22. In your opinion, which of the following educational settings best describes where the components of CAATE PHP-23 were presented and integrated into your preparation for your current athletic training responsibilities.					
☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences					
23. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE PHP-23					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.12 CAATE Competency CE-4

Athletic Training Education Curriculum: A survey of perceived competency					
CAATE CE-4: "Describe the principles and concepts of body movement, including normal osteokinematics and arthrokinematics."					
24. In your opinion, which of the following educational settings best describes where the components of CAATE CE-4 were presented and integrated into your preparation for your current athletic training responsibilities.					
☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences					
25. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE CE-4.					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.13 CAATE Competency TI-17

Athletic Training Education Curriculum: A survey of perceived competency																													
CAATE TI-17: "Analyze gait and select appropriate instruction and correction strategies to facilitate safe progression to functional gait pattern."																													
26. In your opinion, which of the following educational settings best describes where the components of CAATE TI-17 were presented and integrated into your preparation for your current athletic training responsibilities. ☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences																													
27. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE TI-17. <table border="1"> <thead> <tr> <th></th> <th>No Importance</th> <th>Low Importance</th> <th>Moderate Importance</th> <th>High Importance</th> <th>Most Important</th> </tr> </thead> <tbody> <tr> <td>Lectures in the classroom</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Clinical proficiencies in the laboratory scenario setting</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Field experiences with supervision from Clinical Instructor</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> </tbody> </table>							No Importance	Low Importance	Moderate Importance	High Importance	Most Important	Lectures in the classroom	☐	☐	☐	☐	☐	Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐	Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐
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Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐																								
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐																								

Figure A1.14 CAATE Competency PD-9

Athletic Training Education Curriculum: A survey of perceived competency																													
CAATE PD-9: "Specify when referral of a client/patient to another healthcare provider is warranted and formulate and implement strategies to facilitate that referral."																													
28. In your opinion, which of the following educational settings best describes where the components of CAATE PD-9 were presented and integrated into your preparation for your current athletic training responsibilities. ☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory scenario setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences																													
29. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE PD-9. <table border="1"> <thead> <tr> <th></th> <th>No Importance</th> <th>Low Importance</th> <th>Moderate Importance</th> <th>High Importance</th> <th>Most Important</th> </tr> </thead> <tbody> <tr> <td>Lectures in the classroom</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Clinical proficiencies in the laboratory scenario setting</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Field experiences with supervision from Clinical Instructor</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> </tbody> </table>							No Importance	Low Importance	Moderate Importance	High Importance	Most Important	Lectures in the classroom	☐	☐	☐	☐	☐	Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐	Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important																								
Lectures in the classroom	☐	☐	☐	☐	☐																								
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐																								
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐																								

Figure A1.15 CAATE Competency PHP-32

Athletic Training Education Curriculum: A survey of perceived competency					
CAATE PHP-32: "Describe the role of nutrition in enhancing performance, preventing injury or illness, and maintain a healthy lifestyle to patients."					
30. In your opinion, which of the following educational settings best describes where the components of CAATE PHP-32 were presented and integrated into your preparation for your current athletic training responsibilities.					
☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences					
31. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE PHP-32					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.16 CAATE Competency CE-21o

Athletic Training Education Curriculum: A survey of perceived competency					
CAATE CE-21o: "Assess and interpret findings from a physical examination that is based on the patient's clinical presentation for dermatological concerns."					
32. In your opinion, which of the following educational settings best describes where the components of CAATE CE-21o were presented and integrated into your preparation for your current athletic training responsibilities.					
☐ Not introduced in athletic training education					
☐ In the classroom setting					
☐ With theoretical patients in the laboratory setting					
☐ With actual patients in the athletic training room/clinic					
☐ With actual patients in field experiences					
33. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE CE-21o.					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.17 CAATE Competency PS-13

Athletic Training Education Curriculum: A survey of perceived competency					
CAATE PS-13: "Identify and describe the basic signs and symptoms of mental health disorders (e.g. psychosis, neurosis); sub-clinical mood disturbances (e.g. depression, anxiety); and personal/social conflict (e.g. adjustment to injury, family problems, academic or emotional stress, personal assault or abuse, sexual assault or harassment) that may indicate the need for referral to a mental healthcare professional."					
34. In your opinion, which of the following educational settings best describes where the components of CAATE PS-13 were presented and integrated into your preparation for your current athletic training responsibilities.					
☐ Not introduced in athletic training education					
☐ In the classroom setting					
☐ With theoretical patients in the laboratory setting					
☐ With actual patients in the athletic training room/clinic					
☐ With actual patients in field experiences					
35. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE PS-13.					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.18 CAATE Competency PHP-12

Athletic Training Education Curriculum: A survey of perceived competency					
CAATE PHP-12: "Assess current practice guidelines related to physical activity during extreme weather conditions (e.g. heat, cold, lightning, wind)."					
36. In your opinion, which of the following educational settings best describes where the components of CAATE PHP-12 were presented and integrated into your preparation for your current athletic training responsibilities.					
☐ Not introduced in athletic training education					
☐ In the classroom setting					
☐ With theoretical patients in the laboratory setting					
☐ With actual patients in the athletic training room/clinic					
☐ With actual patients in field experiences					
37. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE PHP-12.					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.19 CAATE Competency CE-6

Athletic Training Education Curriculum: A survey of perceived competency					
CAATE CE-6: "Describe the basic principles of diagnostic imaging and testing and their role in the diagnostic process."					
38. In your opinion, which of the following educational settings best describes where the components of CAATE CE-6 were presented and integrated into your preparation for your current athletic training responsibilities.					
☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences					
39. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE CE-6.					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.20 CAATE Competency TI-29

Athletic Training Education Curriculum: A survey of perceived competency					
CAATE TI-29: "Describe how common pharmacological agents influence pain and healing and their influence on various therapeutic interventions."					
40. In your opinion, which of the following educational settings best describes where the components of CAATE TI-29 were presented and integrated into your preparation for your current athletic training responsibilities.					
☐ Not introduced in athletic training education					
☐ In the classroom setting					
☐ With theoretical patients in the laboratory setting					
☐ With actual patients in the athletic training room/clinic					
☐ With actual patients in field experiences					
41. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE TI-29.					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.21 CAATE Competency TI-22

Athletic Training Education Curriculum: A survey of perceived competency					
CAATE TI-22: "Identify and use appropriate pharmacological terminology for management of medications, inventory control, and reporting of pharmacological agents commonly used in an athletic training facility."					
42. In your opinion, which of the following educational settings best describes where the components of CAATE TI-22 were presented and integrated into your preparation for your current athletic training responsibilities.					
☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences					
43. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE TI-22.					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.22 CAATE Competency PS-6

Athletic Training Education Curriculum: A survey of perceived competency					
Interpersonal Skills					
CAATE PS-6: "Explain the importance of educating patients, parents/guardians, and others regarding the condition in order to enhance the psychological and emotional well-being of the patient."					
44. In your opinion, which of the following educational settings best describes where the components of CAATE PS-6 were presented and integrated into your preparation for your current athletic training responsibilities.					
☐ Not introduced in athletic training education					
☐ In the classroom setting					
☐ With theoretical patients in the laboratory setting					
☐ With actual patients in the athletic training room/clinic					
☐ With actual patients in field experiences					
45. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE PS-6.					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.23 CAATE Competency AC-43

Athletic Training Education Curriculum: A survey of perceived competency					
CAATE AC-43: "Instruct the patient in home care and self-treatment plans for acute conditions."					
46. In your opinion, which of the following educational settings best describes where the components of CAATE AC-43 were presented and integrated into your preparation for your current athletic training responsibilities. ☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences					
47. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE AC-43					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.24 CAATE Competency PD-11

Athletic Training Education Curriculum: A survey of perceived competency					
CAATE PD-11: "Identify strategies to educate colleagues, students, patients, the public, and other healthcare professionals about the roles, responsibilities, academic preparation, and scope of practice of athletic trainers."					
48. In your opinion, which of the following educational settings best describes where the components of CAATE PD-11 were presented and integrated into your preparation for your current athletic training responsibilities.					
☐ Not introduced in athletic training education					
☐ In the classroom setting					
☐ With theoretical patients in the laboratory setting					
☐ With actual patients in the athletic training room/clinic					
☐ With actual patients in field experiences					
49. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE PD-11.					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervisions from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.25 Irresolvable Issues

Athletic Training Education Curriculum: A survey of perceived competency																													
Report irresolvable issues when appropriate to senior staff or supervisors																													
50. In your opinion, which of the following educational settings best describes where the components of "report irresolvable issues" were presented and integrated into your preparation for your current athletic training responsibilities. ☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences																													
51. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of reporting irresolvable issues. <table border="1"> <thead> <tr> <th></th> <th>No Importance</th> <th>Low Importance</th> <th>Moderate Importance</th> <th>High Importance</th> <th>Most Important</th> </tr> </thead> <tbody> <tr> <td>Lectures in the classroom</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Clinical proficiencies in the laboratory scenario setting</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Field experiences with supervision from Clinical Instructor</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> </tbody> </table>							No Importance	Low Importance	Moderate Importance	High Importance	Most Important	Lectures in the classroom	☐	☐	☐	☐	☐	Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐	Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important																								
Lectures in the classroom	☐	☐	☐	☐	☐																								
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐																								
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐																								

Figure A1.26 CAATE Competency CE-13

Athletic Training Education Curriculum: A survey of perceived competency					
CAATE CE-13: "Obtain a thorough medical history that includes the pertinent past medical history, underlying systemic disease, use of medications, the patient's perceived pain, and the history and course of the present condition."					
52. In your opinion, which of the following educational settings best describes where the components of CAATE CE-13 were presented and integrated into your preparation for your current athletic training responsibilities.					
☐ Not introduced in athletic training education					
☐ In the classroom setting					
☐ With theoretical patients in the laboratory setting					
☐ With actual patients in the athletic training room/clinic					
☐ With actual patients in field experiences					
53. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE CE-13.					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.27 CAATE Competency HA-11

Athletic Training Education Curriculum: A survey of perceived competency																													
CAATE HA-11: "Use contemporary documentation strategies to effectively communicate with patients, physicians, insurers, colleagues, administrators, and parents or family members."																													
54. In your opinion, which of the following educational settings best describes where the components of CAATE CE-13 were presented and integrated into your preparation for your current athletic training responsibilities. ☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences																													
55. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE HA-11. <table border="1"> <thead> <tr> <th></th> <th>No Importance</th> <th>Low Importance</th> <th>Moderate Importance</th> <th>High Importance</th> <th>Most Important</th> </tr> </thead> <tbody> <tr> <td>Lectures in the classroom</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Clinical proficiencies in the laboratory scenario setting</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Field experiences with supervision from Clinical Instructor</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> </tbody> </table>							No Importance	Low Importance	Moderate Importance	High Importance	Most Important	Lectures in the classroom	☐	☐	☐	☐	☐	Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐	Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important																								
Lectures in the classroom	☐	☐	☐	☐	☐																								
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐																								
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐																								

Figure A1.28 CAATE Competency HA-1

Athletic Training Education Curriculum: A survey of perceived competency					
CAATE HA-1: "Describe the role of the athletic trainer and the delivery of athletic training services within the context of the broader healthcare system."					
56. In your opinion, which of the following educational settings best describes where the components of CAATE HA-1 were presented and integrated into your preparation for your current athletic training responsibilities.					
☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory scenario setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences					
57. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE HA-1.					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.29 Adapting to the Demands of the Profession

Athletic Training Education Curriculum: A survey of perceived competency

Personal Professional Development

The ability to adapt to the demands of the profession of athletic training (e.g. hour demand, non-traditional work schedule, burnout, work-family conflict).

58. In your opinion, which of the following educational settings best describes where the components of "the ability to adapt to the demands of the profession" were presented and integrated into your preparation for your current athletic training responsibilities.

☐ Not introduced in athletic training education

☐ In the classroom setting

☐ With theoretical patients in the laboratory setting

☐ With actual patients in the athletic training room/clinic

☐ With actual patients in field experiences

59. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of "adapting to the demands of the profession."

	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.30 CAATE Competency PD-7

Athletic Training Education Curriculum: A survey of perceived competency																													
CAATE PD-7: "Perform a self-assessment of professional competence and create a professional development plan to maintain necessary credentials and promote life-long learning strategies."																													
60. In your opinion, which of the following educational settings best describes where the components of CAATE PD-7 were presented and integrated into your preparation for your current athletic training responsibilities. ☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences																													
61. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE PD-7. <table border="1"> <thead> <tr> <th></th> <th>No Importance</th> <th>Low Importance</th> <th>Moderate Importance</th> <th>High Importance</th> <th>Most Important</th> </tr> </thead> <tbody> <tr> <td>Lectures in the classroom</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Clinical proficiencies in the laboratory scenario setting</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Field experiences with supervision from Clinical Instructor</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> </tbody> </table>							No Importance	Low Importance	Moderate Importance	High Importance	Most Important	Lectures in the classroom	☐	☐	☐	☐	☐	Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐	Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐
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Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐																								
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐																								

Figure A1.31 *Maintaining a Balance*

Athletic Training Education Curriculum: A survey of perceived competency					
Develop the ability to maintain a balance between career and personal life					
62. In your opinion, which of the following educational settings best describes where the components of "developing the ability to maintain a balance" were presented and integrated into your preparation for your current athletic training responsibilities. ☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences					
63. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of "maintaining a balance between career and personal life."					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field Experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.32 CAATE Competency TI-7

Athletic Training Education Curriculum: A survey of perceived competency																													
CAATE TI-7: "Identify patient- and clinician-oriented outcomes measures commonly used to recommend activity level, make return to play decisions, and maximize patient outcomes and progress in the treatment plan."																													
64. In your opinion, which of the following educational settings best describes where the components of CAATE TI-7 were presented and integrated into your preparation for your current athletic training responsibilities. ☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences																													
65. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE TI-7. <table border="1"> <thead> <tr> <th></th> <th>No Importance</th> <th>Low Importance</th> <th>Moderate Importance</th> <th>High Importance</th> <th>Most Important</th> </tr> </thead> <tbody> <tr> <td>Lectures in the classroom</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Clinical proficiencies in the laboratory scenario setting</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Field experiences with supervision from Clinical Instructor</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> </tbody> </table>							No Importance	Low Importance	Moderate Importance	High Importance	Most Important	Lectures in the classroom	☐	☐	☐	☐	☐	Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐	Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important																								
Lectures in the classroom	☐	☐	☐	☐	☐																								
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐																								
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐																								

Figure A1.33 CAATE Competency PD-8

Athletic Training Education Curriculum: A survey of perceived competency																													
CAATE PD-8: "Differentiate among the preparation, scopes of practice, and roles and responsibilities of healthcare providers and other professionals with whom athletic trainers interact."																													
66. In your opinion, which of the following educational settings best describes where the components of CAATE PD-8 were presented and integrated into your preparation for your current athletic training responsibilities. ☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences																													
67. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE PD-8. <table border="1"> <thead> <tr> <th></th> <th>No Importance</th> <th>Low Importance</th> <th>Moderate Importance</th> <th>High Importance</th> <th>Most Important</th> </tr> </thead> <tbody> <tr> <td>Lectures in the classroom</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Clinical proficiencies in the laboratory scenario setting</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Field experiences with supervision from Clinical instructor</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> </tbody> </table>							No Importance	Low Importance	Moderate Importance	High Importance	Most Important	Lectures in the classroom	☐	☐	☐	☐	☐	Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐	Field experiences with supervision from Clinical instructor	☐	☐	☐	☐	☐
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important																								
Lectures in the classroom	☐	☐	☐	☐	☐																								
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐																								
Field experiences with supervision from Clinical instructor	☐	☐	☐	☐	☐																								

Figure A1.34 *Sense of Self*

Athletic Training Education Curriculum: A survey of perceived competency					
Maintaining a sense of spiritual self, consistent with personal beliefs					
68. In your opinion, which of the following educational settings best describes where the components of "maintaining a sense of spiritual self" were presented and integrated into your preparation for your current athletic training responsibilities.					
☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences					
69. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of "maintaining a sense of spiritual self."					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.35 CAATE Competency EBP-4

Athletic Training Education Curriculum: A survey of perceived competency					
CAATE EBP-4: "Describe a systemic approach (e.g. five step approach) to create and answer a clinical question through review and application of existing research."					
70. In your opinion, which of the following educational settings best describes where the components of CAATE EBP-4 were presented and integrated into your preparation for your current athletic training responsibilities.					
☐ Not introduced in athletic training education					
☐ In the classroom setting					
☐ With theoretical patients in the laboratory setting					
☐ With actual patients in the athletic training room/clinic					
☐ With actual patients in field experiences					
71. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE EBP-4.					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.36 *Coping with Return to Play*

Athletic Training Education Curriculum: A survey of perceived competency					
Effectively coping with the pressures of return to play from the coaching staff					
72. In your opinion, which of the following educational settings best describes where the components of "effectively coping with the pressures of return to play" were presented and integrated into your preparation for your current athletic training responsibilities. ☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences					
73. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of "effectively coping with the pressures of return to play."					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.37 CAATE Competency EBP-7

Athletic Training Education Curriculum: A survey of perceived competency

CAATE EBP-7: "Conduct a literature search using a clinical question relevant to athletic training practice using search techniques and resources appropriate for a specific clinical question."

74. In your opinion, which of the following educational settings best describes where the components of CAATE EBP-7 were presented and integrated into your preparation for your current athletic training responsibilities.

☐ Not introduced in athletic training education

☐ In the classroom setting

☐ With theoretical patients in the laboratory setting

☐ With actual patients in the athletic training room/clinic

☐ With actual patients in field experiences

75. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of CAATE EBP-7.

	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Supervisor	☐	☐	☐	☐	☐

Figure A1.38 *Knowing Scope of Practice*

Athletic Training Education Curriculum: A survey of perceived competency					
Knowing the scope of practice and being able to determine when to ask for help in situations when needed					
76. In your opinion, which of the following educational settings best describes where the components of "knowing scope of practice" were presented and integrated into your preparation for your current athletic training responsibilities. ☐ Not introduced in athletic training education ☐ In the classroom setting ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With actual patients in field experiences					
77. Rate each of the following educational settings with regard to its level of importance in establishing your mastery of "knowing the scope of practice."					
	No Importance	Low Importance	Moderate Importance	High Importance	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐

Figure A1.39 Remaining Calm

Athletic Training Education Curriculum: A survey of perceived competency					
Remaining calm during situations that require advanced medical assistance within the realm of athletic training					
78. In your opinion, which of the following educational settings best describes where the components of "remaining calm during situations" were presented and integrated into your preparation for your current athletic training responsibilities.					
☐ Not introduced in athletic trianing education ☐ In the classroom ☐ With theoretical patients in the laboratory setting ☐ With actual patients in the athletic training room/clinic ☐ With acual patients in field experiences					
79. Rate each of the following educational settings with regard to its level of impotrance in establishing your mastery of "Remaining calm during situations."					
	No Influence	Low Influence	Moderate Influence	High Influence	Most Important
Lectures in the classroom	☐	☐	☐	☐	☐
Clinical proficiencies in the laboratory scenario setting	☐	☐	☐	☐	☐
Field experiences with supervision from Clinical Instructor	☐	☐	☐	☐	☐
Thank you for participating!					

Appendix B

Responses of Individual Questions

Appendix B displays the aggregate results to the individual competency in question within the survey. Subjects were asked to complete two sections for each competency. The first question asked the subject in which educational setting the material was presented and integrated in their learning process. The answers to this inquiry are based on the concept of learning over time in which each phase builds upon one another.

- **Not presented in Athletic Training Education**
- **In the Classroom Setting**
- **With Theoretical Patients in the Laboratory Setting:** including in the classroom setting
- **With Actual Patients in the Athletic Training Room:** After being taught in the classroom and allowed to practice in the laboratory setting
- **With Actual Patients in the Field Setting:** After being taught in the classroom, practiced in the laboratory setting, with actual patients in the athletic training room

The follow up question to where the information was presented and integrated in the subject's education was to determine level of importance of each of the educational settings within their education. The three educational settings were the classroom, the laboratory and the field. Subjects were required to rate each of the settings based on a 5 point Likert scale with integers at (1) no importance, (2) low importance, (3) moderate importance, (4) high importance, and (5) most important. The charts below correlate the aggregate responses for each educational setting in which the information was presented and integrated with their reported level of importance for each of the same settings.

General CAATE Proficiencies

Table B1.1 CAATE CE-20: "Use standard techniques and procedures for the clinical examination of common injuries, conditions, illnesses and diseases."

			Mean Level of Importance		
Educational Setting	Count	N %	Classroom	Laboratory	Field
Not introduced in AT education	0	.0%	0	0	0
In classroom setting	45	29.2%	3.78	4.02	4.53
With theoretical lab patients	30	19.5%	3.67	4.31	4.40
With actual patients in AT room	62	40.3%	3.63	3.92	4.84
With actual patients in field	17	11.0%	3.76	3.94	4.94

Table B1.2 CAATE CE-15: "Demonstrate the ability to modify the diagnostic examination process according to the demands of the situation and patient responses."

			Mean Level of Importance		
Educational Setting	Count	N %	Classroom	Laboratory	Field
Not introduced in AT education	0	.0%	0	0	0
In classroom setting	24	15.6%	3.75	3.75	4.42
With theoretical lab patients	28	18.2%	3.32	4.18	4.54
With actual patients in AT room	62	40.3%	3.34	3.74	4.65
With actual patients in field	40	26.0%	3.32	3.70	4.95

Table B1.3 CAATE TI-11: "Design therapeutic interventions to meet specific treatment goals."

			Mean Level of Importance		
Educational Setting	Count	N %	Classroom	Laboratory	Field
Not introduced in AT education	0	.0%	0	0	0
In classroom setting	62	40.3%	4.02	3.89	4.32
With theoretical lab patients	26	16.9%	3.81	4.35	4.04
With actual patients in AT room	53	34.4%	3.66	3.77	4.60
With actual patients in field	13	8.4%	3.92	3.77	4.92

Table B1.4 CAATE TI-11a: "Assess the patient to identify indications, contraindications, and precautions applicable to the intended intervention."

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	0	.0%	0	0	0
In classroom setting	86	55.8%	4.19	3.92	4.17
With theoretical lab patients	33	21.4%	3.82	4.15	4.00
With actual patients in AT room	26	16.9%	3.62	3.85	4.54
With actual patients in field	9	5.8%	3.56	3.89	4.89

Table B1.5 CAATE TI-13: "Describe the relationship between the application of therapeutic modalities and the incorporation of active and passive exercise and/or manual therapies, including therapeutic massage, myofascial techniques, and muscle energy techniques."

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	0	.0%	0	0	0
In classroom setting	45	29.2%	4.18	3.82	4.29
With theoretical lab patients	44	28.6%	3.45	4.36	4.27
With actual patients in AT room	56	36.4%	3.34	3.61	4.61
With actual patients in field	9	5.8%	3.67	3.78	5.00

Table B1.6 CAATE CE-16: "Recognize the signs and symptoms of catastrophic and emergent conditions and demonstrate appropriate referral decisions."

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	0	.0%	0	0	0
In classroom setting	80	51.9%	4.21	3.87	3.95
With theoretical lab patients	55	35.7%	3.89	4.56	4.35
With actual patients in AT room	6	3.9%	3.33	3.83	4.83
With actual patients in field	13	8.4%	3.77	3.85	4.92

Table B1.7 CAATE PHP-23: "Apply preventative taping and wrapping procedures, splints, braces and other special protective devices."

			Mean Level of Importance		
Educational Setting	Count	N %	Classroom	Laboratory	Field
Not introduced in AT education	0	.0%	0	0	0
In classroom setting	26	16.9%	3.62	3.92	4.23
With theoretical lab patients	65	42.2%	2.89	4.60	4.37
With actual patients in AT room	43	27.9%	3.14	4.23	4.74
With actual patients in field	20	13.0%	2.80	4.05	4.65

Table B1.8 CAATE CE-4: "Describe the principles and concepts of body movement, including normal osteokinematics and arthrokinematics."

			Mean Level of Importance		
Educational Setting	Count	N %	Classroom	Laboratory	Field
Not introduced in AT education	4	2.6%	3.50	4.25	4.25
In classroom setting	128	83.1%	4.34	3.50	3.45
With theoretical lab patients	14	9.1%	4.00	4.00	4.14
With actual patients in AT room	8	5.2%	4.00	3.75	4.75
With actual patients in field	0	.0%	0	0	0

Table B1.9 CAATE TI-17: "Analyze gait and select appropriate instruction and correction strategies to facilitate safe progression to functional gait pattern."

			Mean Level of Importance		
Educational Setting	Count	N %	Classroom	Laboratory	Field
Not introduced in AT education	2	1.3%	4.00	4.50	5.00
In classroom setting	68	44.2%	3.84	3.87	4.01
With theoretical lab patients	58	37.7%	3.52	4.17	3.71
With actual patients in AT room	19	12.3%	3.58	3.84	4.53
With actual patients in field	7	4.5%	3.43	3.71	5.00

Table B1.10 CAATE PD-9: "Specify when referral of a client/patient to another healthcare provider is warranted and formulate and implement strategies to facilitate that referral."

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	4	2.6%	3.25	2.67	3.75
In classroom setting	64	41.6%	4.03	3.42	4.06
With theoretical lab patients	23	14.9%	3.74	4.17	4.13
With actual patients in AT room	51	33.1%	3.24	3.16	4.61
With actual patients in field	12	7.8%	3.50	3.33	4.83

Table B1.11 CAATE PHP-32: "Describe the role of nutrition in enhancing performance, preventing injury or illness, and maintain a healthy lifestyle to patients."

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	4	2.6%	3.25	3.25	4.25
In classroom setting	135	87.7%	4.25	3.22	3.49
With theoretical lab patients	3	1.9%	4.33	4.33	4.33
With actual patients in AT room	9	5.8%	3.78	3.56	3.89
With actual patients in field	3	1.9%	4.33	3.00	4.00

Table B1.12 CAATE CE-21o: "Assess and interpret findings from a physical examination that is based on the patient's clinical presentation for dermatological concerns."

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	4	2.6%	3.67	3.00	4.00
In classroom setting	87	56.5%	3.86	3.11	3.89
With theoretical lab patients	18	11.7%	3.94	4.39	4.44
With actual patients in AT room	34	22.1%	3.65	3.38	4.44
With actual patients in field	11	7.1%	3.55	3.82	4.55

Table B1.13 CAATE PS-13: "Identify and describe the basic signs and symptoms of mental health disorders (e.g. psychosis, neurosis); sub-clinical mood disturbances (e.g. depression, anxiety); and personal/social conflict (e.g. adjustment to injury, family problems, academic or emotional stress, personal assault or abuse, sexual assault or harassment) that may indicate the need for referral to a mental healthcare professional."

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	7	4.5%	2.71	2.57	3.14
In classroom setting	120	77.9%	4.07	3.24	3.54
With theoretical lab patients	19	12.3%	4.16	4.37	3.84
With actual patients in AT room	6	3.9%	3.67	2.50	4.83
With actual patients in field	2	1.3%	3.50	2.50	5.00

Table B1.14 CAATE PHP-12: "Assess current practice guidelines related to physical activity during extreme weather conditions (e.g. heat, cold, lightning, wind)."

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	0	.0%	0	0	0
In classroom setting	105	68.2%	4.21	3.30	3.98
With theoretical lab patients	10	6.5%	3.50	3.90	3.60
With actual patients in AT room	8	5.2%	4.00	3.63	4.75
With actual patients in field	31	20.1%	3.74	3.58	4.77

Table B1.15 CAATE CE-6: "Describe the basic principles of diagnostic imaging and testing and their role in the diagnostic process."

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	10	6.5%	3.63	3.38	4.25
In classroom setting	116	75.3%	3.97	3.07	3.72
With theoretical lab patients	5	3.2%	4.00	3.40	3.40
With actual patients in AT room	12	7.8%	3.83	3.25	4.58
With actual patients in field	11	7.1%	3.55	3.27	4.73

Table B1.16 CAATE TI-29: "Describe how common pharmacological agents influence pain and healing and their influence on various therapeutic interventions."

			Mean Level of Importance		
Educational Setting	Count	N %	Classroom	Laboratory	Field
Not introduced in AT education	0	.0%	0	0	0
In classroom setting	139	90.3%	4.31	3.14	3.50
With theoretical lab patients	7	4.5%	4.43	4.29	4.00
With actual patients in AT room	5	3.2%	3.60	3.40	3.60
With actual patients in field	3	1.9%	4.67	3.33	4.33

Table B1.17 CAATE TI-22: "Identify and use appropriate pharmacological terminology for management of medications, inventory control, and reporting of pharmacological agents commonly used in an athletic training facility."

			Mean Level of Importance		
Educational Setting	Count	N %	Classroom	Laboratory	Field
Not introduced in AT education	11	7.1%	1.78	1.67	2.11
In classroom setting	114	74.0%	4.18	3.08	3.55
With theoretical lab patients	4	2.6%	4.25	3.75	4.00
With actual patients in AT room	22	14.3%	3.41	3.09	4.32
With actual patients in field	3	1.9%	4.33	3.33	4.00

Interpersonal Skills Development

Table B1.18 CAATE PS-6: "Explain the importance of educating patients, parents/guardians, and others regarding the condition in order to enhance the psychological and emotional well-being of the patient"

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	8	5.2%	3.13	2.88	3.25
In classroom setting	73	47.4%	3.89	3.14	3.99
With theoretical lab patients	12	7.8%	3.00	3.92	4.08
With actual patients in AT room	41	26.6%	3.29	3.54	4.66
With actual patients in field	20	13.0%	3.15	2.85	4.65

Table B1.19 CAATE AC-43: "Instruct the patient in home care and self-treatment plans for acute conditions."

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	3	1.9%	3.33	4.00	4.00
In classroom setting	30	19.5%	3.57	3.60	4.47
With theoretical lab patients	19	12.3%	3.26	4.05	4.37
With actual patients in AT room	74	48.1%	3.43	3.55	4.60
With actual patients in field	28	18.2%	3.36	3.32	4.71

Table B1.20 CAATE PD-11: "Identify strategies to educate colleagues, students, patients, the public, and other healthcare professionals about the roles, responsibilities, academic preparation, and scope of practice of athletic trainers."

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	11	7.1%	2.09	1.82	3.09
In classroom setting	105	68.2%	4.11	2.90	3.49
With theoretical lab patients	1	.6%	5.00	3.00	3.00
With actual patients in AT room	18	11.7%	3.50	3.56	4.56
With actual patients in field	19	12.3%	3.21	2.79	4.68

Table B1.21 Report irresolvable issues when appropriate to senior staff or supervisors

			Mean Level of Importance		
Educational Setting	Count	N %	Classroom	Laboratory	Field
Not introduced in AT education	19	12.3%	2.61	2.50	3.11
In classroom setting	71	46.1%	3.66	3.01	3.51
With theoretical lab patients	10	6.5%	3.50	4.20	3.70
With actual patients in AT room	40	26.0%	3.03	3.33	4.45
With actual patients in field	14	9.1%	2.71	2.71	4.57

Table B1.22 CAATE CE-13: "Obtain a thorough medical history that includes the pertinent past medical history, underlying systemic disease, use of medications, the patient's perceived pain, and the history and course of the present condition."

			Mean Level if Importance		
Educational Setting	Count	N %	Classroom	Laboratory	Field
Not introduced in AT education	0	.0%	0	0	0
In classroom setting	45	29.2%	4.04	3.93	4.42
With theoretical lab patients	46	29.9%	3.61	4.54	4.41
With actual patients in AT room	47	30.5%	3.81	4.04	4.79
With actual patients in field	16	10.4%	3.81	4.06	4.81

Table B1.23 CAATE HA-11: "Use contemporary documentation strategies to effectively communicate with patients, physicians, insurers, colleagues, administrators, and parents or family members."

			Mean Level of Importance		
Educational Setting	Count	N %	Classroom	Laboratory	Field
Not introduced in AT education	3	1.9%	4.50	4.00	4.00
In classroom setting	72	46.8%	3.80	3.42	4.07
With theoretical lab patients	10	6.5%	4.20	4.40	4.40
With actual patients in AT room	56	36.4%	3.41	3.61	4.55
With actual patients in field	13	8.4%	3.38	3.77	4.85

Table B1.24 CAATE HA-1: "Describe the role of the athletic trainer and the delivery of athletic training services within the context of the broader healthcare system."

			Mean Level of Importance		
Educational Setting	Count	N %	Classroom	Laboratory	Field
Not introduced in AT education	3	1.9%	3.00	4.00	3.50
In classroom setting	124	80.5%	4.03	2.88	3.48
With theoretical lab patients	4	2.6%	3.00	3.25	3.50
With actual patients in AT room	10	6.5%	3.80	4.00	4.20
With actual patients in field	13	8.4%	3.69	3.31	4.77

Table B1.25 *The ability to adapt to the demands of the profession of athletic training (e.g. hour demand, non-traditional work schedule, burnout, work-family conflict).*

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	13	8.4%	2.15	2.08	3.62
In classroom setting	48	31.2%	3.65	2.73	3.52
With theoretical lab patients	1	.6%	4.00	3.00	3.00
With actual patients in AT room	47	30.5%	2.81	2.72	4.79
With actual patients in field	45	29.2%	2.80	2.60	4.89

Table B1.26 *CAATE PD-7: "Perform a self-assessment of professional competence and create a professional development plan to maintain necessary credentials and promote life-long learning strategies."*

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	26	16.9%	2.85	2.27	2.88
In classroom setting	97	63.0%	4.01	2.63	3.16
With theoretical lab patients	4	2.6%	3.50	4.00	4.25
With actual patients in AT room	11	7.1%	2.91	3.18	4.64
With actual patients in field	16	10.4%	3.25	3.69	4.75

Table B1.27 *Develop the ability to maintain a balance between career and personal life*

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	27	17.5%	1.93	1.70	2.67
In classroom setting	54	35.1%	3.48	2.60	3.69
With theoretical lab patients	2	1.3%	3.00	3.50	3.00
With actual patients in AT room	32	20.8%	2.81	2.34	4.53
With actual patients in field	39	25.3%	2.62	2.41	4.69

Table B1.28 CAATE TI-7: "Identify patient- and clinician-oriented outcomes measures commonly used to recommend activity level, make return to play decisions, and maximize patient outcomes and progress in the treatment plan."

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	7	4.5%	2.71	2.71	3.57
In classroom setting	40	26.0%	3.80	3.45	4.45
With theoretical lab patients	24	15.6%	3.42	4.08	4.29
With actual patients in AT room	56	36.4%	3.55	3.64	4.55
With actual patients in field	27	17.5%	3.74	3.93	4.81

Table B1.29 CAATE PD-8: "Differentiate among the preparation, scopes of practice, and roles and responsibilities of healthcare providers and other professionals with whom athletic trainers interact."

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	6	3.9%	3.00	2.17	2.83
In classroom setting	106	68.8%	4.07	2.90	3.67
With theoretical lab patients	5	3.2%	3.60	4.20	3.80
With actual patients in AT room	19	12.3%	3.63	3.47	4.68
With actual patients in field	18	11.7%	3.50	3.11	4.50

Table B1.30 Maintaining a sense of spiritual self, consistent with personal beliefs

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	77	50.0%	1.74	1.48	2.38
In classroom setting	41	26.6%	3.90	2.63	3.20
With theoretical lab patients	4	2.6%	4.25	4.00	4.25
With actual patients in AT room	19	12.3%	2.79	2.79	4.53
With actual patients in field	13	8.4%	2.31	2.69	4.62

Table B1.31 CAATE EBP-4: "Describe a systemic approach (e.g. five step approach) to create and answer a clinical question through review and application of existing research."

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	20	13.0%	2.40	1.90	2.05
In classroom setting	107	69.5%	4.11	3.03	3.13
With theoretical lab patients	12	7.8%	3.75	3.92	3.75
With actual patients in AT room	9	5.8%	3.89	4.00	4.44
With actual patients in field	6	3.9%	3.50	4.17	5.00

Table B1.32 Effectively coping with the pressures of return to play from the coaching staff

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	16	10.4%	2.00	2.19	3.75
In classroom setting	33	21.4%	3.30	3.00	4.30
With theoretical lab patients	11	7.1%	3.36	3.45	4.18
With actual patients in AT room	43	27.9%	3.28	3.40	4.63
With actual patients in field	51	33.1%	2.98	2.96	4.84

Table B1.33 CAATE EBP-7: "Conduct a literature search using a clinical question relevant to athletic training practice using search techniques and resources appropriate for a specific clinical question."

Educational Setting	Count	N %	Mean Level of Importance		
			Classroom	Laboratory	Field
Not introduced in AT education	3	1.9%	3.33	2.00	2.33
In classroom setting	135	87.7%	4.34	2.67	2.73
With theoretical lab patients	5	3.2%	3.40	4.00	4.00
With actual patients in AT room	3	1.9%	4.00	4.00	4.00
With actual patients in field	8	5.2%	3.87	3.50	4.63

Table B1.34 *Knowing the scope of practice and being able to determine when to ask for help in situations when needed*

			Mean Level of Importance		
Educational Setting	Count	N %	Classroom	Laboratory	Field
Not introduced in AT education	4	2.6%	2.50	2.25	3.25
In classroom setting	63	40.9%	4.05	3.22	3.81
With theoretical lab patients	8	5.2%	3.38	3.63	3.63
With actual patients in AT room	44	28.6%	3.59	3.41	4.59
With actual patients in field	35	22.7%	3.57	3.34	4.74

Table B1.35 *Remaining calm during situations that require advanced medical assistance within the realm of athletic training*

			Mean Level of Importance		
Educational Setting	Count	N %	Classroom	Laboratory	Field
Not introduced in AT education	3	1.9%	2.67	3.33	4.00
In classroom setting	23	14.9%	3.45	3.50	4.64
With theoretical lab patients	27	17.5%	3.41	4.07	4.19
With actual patients in AT room	29	18.8%	3.31	3.72	4.90
With actual patients in field	72	46.8%	3.04	3.55	4.89

Appendix C

Letter to Cohort to Participate in Survey

Dear Participant,

My name is Brian Bratta and I am completing a doctoral degree at Michigan State University. I am writing to ask for your participation in research for my research practicum project.

This survey is being conducted to identify the different clinical instruction strategies that were employed by the athletic training faculty during your undergraduate athletic training education program. We are asking for your participation as a certified athletic trainer that has completed the certification exam during the last 18 months. The survey is available from the Survey Monkey link at the bottom of this page. The entire survey will take about 20 minutes to complete. Participation is voluntary and you must be 18 years or older to participate. The survey does not require any personal information and only the responses to the questions will be included in the database. The analysis of the information collected from the survey uses the data as an aggregate. You may decline participation at any time and you may also skip questions. Your response to this survey is voluntary and you can terminate your participation by closing your web browser. The results of this research will add insight into the clinical education teaching techniques used by clinical instructors. Anonymity will be maintained to the maximum extent of the law.

If you have any questions or concerns about this survey and/or your role as a participant, please do not hesitate to contact me at 105 IM Sports Circle, East Lansing, MI 48824 or at brattabr@ath.msu.edu. If you have any questions about your role and rights as a research participant, or would like to register a complaint about this study, you may contact, anonymously if you wish, MSU's Human Research Protection Programs at 517-355-2180, FAX 517-432-4503, or email irb@msu.edu, or regular mail at 207 Olds Hall, MSU, East Lansing, MI 48824. This student survey is not approved or endorsed by NATA. It is being sent to you because of NATA's commitment to athletic training education and research.

I thank you in advance for your contribution to this research and for your willingness to share your experiences. Please click on the link below to proceed to the survey. Doing so will indicate your voluntary agreement to participate in this research.

Internet site inserted here

Sincerely,

Brian Bratta, MS, ATC, CSCS
Secondary Investigator
Doctoral Candidate
Michigan State University
105 IM Sports Circle
East Lansing, MI 48824
517-432-5018
brattabr@ath.msu.edu

John Powell, PhD, ATC
Responsible Primary Investigator
Graduate ATEP Director
Michigan State University
105 IM Sports Circle
East Lansing, MI 48824
517-432-5018
powellj4@ath.msu.edu

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