Entry-Level Athletic Trainers' Perceived Adequacy of Clinical Education in Preparation for Confident Professional Practice

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ABSTRACT

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Entry-Level Athletic Trainers' Perceived Adequacy of Clinical Education in Preparation for Confident Professional Practice

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Athletic training educators are responsible for providing athletic training students a proper environment in which they have opportunities to apply didactic knowledge using critical thinking and decision making skills in a real world context (Radtke, 2008). Clinical education needs to play an integral role in developing athletic training students into competent, confident practicing professionals. This study gathered the perceptions of newly practicing athletic trainers about their clinical education preparation. The purpose was to identify perceptions of their clinical education in preparing them for confident entry-level employment.

An instrument was constructed based on the Board of Certification (BOC) professional practice domains to collect information regarding perceptions of adequacy, confidence to practice, demographic information and professional preparation indicators. The sample was gathered through the National Athletic Trainers' Association (NATA) Membership Database Office, limiting subjects to graduates within the past two years and individuals currently employed as athletic trainers. The instrument was administered through Survey Monkey and analyzed using SPSS.

Overall, 85.2% of the respondents perceived their clinical education to be adequate, 94.5% felt confident to practice AT, and cumulatively, by the adequacy

confidence index (A-CI), 94.7% felt their clinical education was adequate in preparing them for confident professional practice. Weak correlations existed between any of the professional preparation indicators and perceived adequacy, confidence to practice, or cumulatively.

Future research in the field of athletic training clinical education will transition to align with the 5th edition of the AT Educational Competencies. In particular, research focus should look more specifically at BOC exam success, clinical instructors and their attitudes towards their role as an educator, and on active learning time during clinical education.

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Though the battle was long and arduous, you prevailed.

You made me who I am today.

TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1: INTRODUCTION

Athletic training is recognized by the American Medical Association as an allied health care profession (Prentice, 2006). Related with the consistent idea of patient care, athletic training is similar to other health care fields and its educational requirements consist of both classroom and clinical study. Athletic trainers work together with various physicians, specialist, emergency medical services, administrators, and parents/guardians to deliver health care services to a physically active population and coordinate treatment as a key member of this health care system (CAATE, 2008). The professional domains of athletic training as derived from the Board of Certification (BOC) Role Delineation are: prevention of athletic injuries, immediate care, clinical evaluation and diagnosis, treatment, rehabilitation and reconditioning, professional practice, and organization/administration (BOC, 2004). Educational preparation to become an athletic trainer is rigorous and consists of two options: (1) a four year baccalaureate degree or (2) an entry-level master degree. Both must be comprised of a combination of coursework and clinical education requirements.

The National Athletic Trainers' Association (NATA) Education Council developed the *Athletic Training Educational Competencies, 4th edition* (2006) to serve as a guide in the development of athletic training curriculums. The competencies are similar to learning objectives that prepare athletic training students with the knowledge that is required to practice athletic training and to sit for the Board of Certification (BOC) examination. The competencies clearly depict the information that athletic training students (ATSs) should be learning in the classroom and have three behavioral

classifications: cognitive competencies, psychomotor competencies, and clinical proficiencies.

The didactic aspects of an Athletic Training Program's (ATP) curricula must correlate with the domains of the profession. Courses such as therapeutic exercise, examination and diagnosis, therapeutic modalities, AT administration, emergency care, pharmacology, and others teach the knowledge and skills that are necessary to become a practicing clinician. The clinical education portion allows for the practical application of this knowledge to real life situations and patients. Having the opportunity to function within a clinically allows ATSs to experience the concept of patient care and professional responsibilities of athletic training.

A revision to the NATA Education Council's *Athletic Training Educational Competencies, 4th edition* (2006), places a focus on the concept of professional practice. The Foundational Behaviors of Professional Practice are behavioral concepts and values that are seen throughout all aspects of athletic training professional practice. The Education Council encourages educators to incorporate these basic principles continually throughout the program's curriculum (NATA Education Council, *Athletic Training Educational Competencies, 4th edition*) and a student's professional development.

Overview of Athletic Training Clinical Education

Clinical education is defined as "the application of knowledge and skills, learned in the classroom and laboratory settings, to actual patients under the supervision of an ACI/CI" (CAATE, 2008). Clinical education provides an opportunity within the athletic training curriculum to acquire required proficiencies through a combination of theoretical

and practical knowledge gained through the coursework, to be applied in real-life professional situations and patients (Weidner, Noble, & Pipkin, 2006). As of 2001, the Board of Certification (BOC) no longer has a set minimum hour requirement for clinical education. The proficiencies now focus on the athletic training students having a variety of learning experiences concentrating on upper or lower extremity injuries, collision sports that use protective equipment, high school experiences and general medical observations (BOC, 2004).

Clinical proficiencies, as designed by the NATA Education Council (2006), are used as assessment tools to determine if ATSs are able to integrate skills, decision making, critical thinking, and to demonstrate their knowledge. The proficiencies are a standard requirement of CAATE (2008) and must demonstrate learning over time. The opportunity for assessment can occur naturally when a situation arises at the clinical site, during the ATS's clinical education or by using a simulated scenario (CAATE).

Clinical education is a crucial component of an athletic training program's (ATP) curriculum (Weidner & Henning, 2004; Lauber & Killian 2009). "Developing athletic training students into effective practitioners should be a priority" (Radtke, 2008). Clinical education should be an experience for ATSs to practice critical thinking and decision making skills in the application of knowledge by becoming actively involved with the learning process to become a competent practitioner. These experience need to involve the "big picture." ATSs should have the opportunity to comprehensively practice and apply their knowledge versus isolated psychomotor skills (Amato, Konin, Brader, 2002). This component of ATSs' education provides experiences and opportunities that

cannot be taught within the classroom. The clinical experience is the closest simulation to functioning in an athletic training or related health care facility.

Statement of the Problem

Radtke (2008) writes that athletic training educators neglect giving ATSs a proper environment in which they have the opportunity to apply didactic knowledge using critical thinking and decision making skills in a real world context. Knight (2006) agreed that AT classroom knowledge was meaningless without the ability to apply this knowledge through clinical experiences. In a 2006 NATA News Editorial, a student stated that the didactic aspect of their athletic training education was more critical to succeed on the BOC exam, but that clinical education was the pivotal cornerstone in preparing a student for real world professional practice (Knight, 2006).

Clinical education research in the field of athletic training is primarily centered around clinical instructors and the characteristics of clinical settings, neglecting the concept of the athletic training student as a learner within the clinical setting (Radtke). Attention needs to be devoted to the primary objective of athletic training education, providing the best and the most effective education for our students to develop competent entry-level health care professionals. In particular, respondents from a study conducted by Laurent and Weidner (2002) reported that clinical education was responsible for 53% of students' professional development.

The efforts educators make towards creating competent entry-level athletic trainers should have a solid foundation of evidence on which to base decisions for curriculum design and the structure of clinical education. The problem lies in our lack of

understanding of the perceptions of athletic training students themselves regarding what is adequate clinical professional preparation. Since the Massie study done in 2003, there has been no AT educational research on the perceptions of recent ATSs on either didactic or clinical education. Since 2003 there have been significant changes in academic preparation, with the elimination of the internship route to certification and many other accreditation revisions. AT educators need to search for insight from entry-level practitioners to gain an understanding of the effectiveness of clinical education in preparing ATSs for professional practice.

Research Questions

The purpose of this investigation is to examine athletic training clinical education. from the perspectives of entry-level practitioners: recent athletic training students who are now entering the work force and beginning their athletic training careers. This examination is guided by the following questions:

1. What are entry-level athletic trainers' perceptions of adequacy of clinical education preparation?
2. After certification, how do entry-level athletic trainers rate their level of confidence to practice?
3. What is the relationship between professional preparation indicators and entry-level athletic trainers' perceptions of adequacy of their clinical education and confidence to practice?

Hypotheses

1. Entry-level athletic trainers will perceive their clinical education preparation to be adequate.
2. Entry-level athletic trainers report having low self-confidence in their abilities to practice the domains of athletic training.
3. No relationship will exist between professional preparation indicators and entry-level athletic trainers' perceptions of clinical education adequacy or confidence to practice.

Significance of the Study

The overriding aim of this dissertation is to gain a better understanding of how to best serve and develop the skills of athletic training students. The results of this study are important to understand whether ATPs are producing entry-level practitioners who are feeling confident to practice within the profession and that their clinical education was adequate in preparing them to do so.

ATPs should strive to provide ATSs with the most beneficial clinical education. Athletic training curricula are constructed around the six professional domains, so this investigation will shed light on whether more attention needs to be given to a particular content area in order to develop clinicians that are confident to practice across all practice domains. Athletic training is an ever-changing world of practice. We, as educators, want to understand if the skills that we intend for ATSs' clinical education to develop mirror the demands placed on entry-level practitioners. The results will illuminate the points of view of the athletic training students on the adequacy of their clinical education, allowing

athletic training educators to examine ATPs clinical education curriculums in order to make needed progressive educational advancements.

The results of this study could be of potential interest to athletic training educators: professors, clinical supervisors, program directors, and clinical coordinators. Results could shed light on areas of clinical education that may be lacking in individual programs. The perceptions instrument could be used to illicit information from recent alumni of a university's ATP. If correlations exist between perceived adequacy of clinical education and certain professional preparation indicators, maybe ATPs to which this applies to will be advised to reflect on their own clinical education curricula.

Definition of Terms

Adequacy is a quality of being satisfied to a sufficient point (Agnes, 2001). In the context of this study, it is the perceived adequacy of clinical education as indicated by the interpretation of the term by each respondent.

Adequacy Confidence Index (A-CI) is a summative score on all survey items that pertain to both perceived adequacy of clinical education and confidence to practice athletic training.

Approved Clinical Instructor (ACI) is a Certified Athletic Trainer (ATC) holding this certification for a minimum one year (and/or if applicable in their state of practice, state licensed, certificated, or registered). An ACI must have undergone a training session by a Clinical Instructor Educator (CAATE, 2008). An ACI can evaluate ATSs on clinical proficiencies.

Athletic Trainers are recognized by the American Medical Association as health care professionals who specialize in working with the physically active in the recognition, prevention, immediate care, administration/organization, and rehabilitation of injuries (Prentice, 2006). In states which have Athletic Training licensure, an *Athletic Trainer (AT)* must graduate from a *CAATE* accredited program and pass the BOC examination (BOC, 2009).

Athletic Training Program (ATP) is the title given to the program within a college, which trains and teaches students to become athletic trainers (CAATE, 2008).

Athletic Training Student (ATS) is an undergraduate student who is accepted and enrolled in a CAATE accredited ATP (CAATE, 2008).

The *Board of Certification (BOC)* exam is a two part examination. Written multiple choice and hybrid questions must be passed in order to become employed and practice athletic training. Between the 1970s and 2000 the *BOC* was a joint committee within the National Athletic Trainers' Association, hence during this time period the exam was referred to as the National Athletic Trainers' Association Board of Certification Exam (NATABOC) (Weidner & Henning, 2002).

Clinical Experience is an aspect of the athletic training curriculum in which students have the opportunity to combine theoretical and practical knowledge gained through coursework with real-life situations and patients (Weidner, Noble, & Pipkin, 2006).

Clinical Instructor (CI) is an individual who can provide clinical supervision to ATSs during their clinical experiences (CAATE, 2008). This person does not necessarily have

to be an ATC, but can be another health care professional. They are not however qualified to verify ATSs' clinical proficiencies (CAATE).

Clinical Instructor Educator (CIE) is an athletic trainer who has been certified by the BOC for at least three years, is designated by the institution as the CIE for the ATP, and is knowledgeable about clinical education and supervision guidelines (CAATE, 2008). The *CIE* is responsible for conducting ACI training sessions with those ATs who will be responsible for supervising ATSs.

Clinical Internship is an experience that immerses an ATS within a clinical site for an entire academic term, under the direct supervision of a health care professional, typically away from the host institution and usually while the student is not enrolled in other didactic coursework.

Clinical proficiencies are a specific set of skills that require ATSs to combine their classroom knowledge with psychomotor and decision making skills to demonstrate an understanding and sufficient level of ability. The necessary skills are listed in the fourth edition of the Athletic Training Educational Competencies (*NATA Education Council, 2006*). Clinical proficiencies must be accomplished to demonstrate that an ATS is prepared to become an entry-level practitioner (Walker, Weidner, & Armstrong, 2008).

The *Commission on Accreditation of Athletic Training Education (CAATE)* is the accrediting body that regulates the structure and determines the minimum quality standards for ATP (CAATE, 2008).

Competencies, both psychomotor and cognitive, are the set of skills and necessary knowledge to begin practice as an Athletic Trainer, created by the National Athletic Trainers' Association Education Council (2006).

Confidence is the belief in one's abilities (Agnes, 2001). In the context of this study, it is the confidence of entry-level practitioners to practice athletic training in real world settings as indicated by the interpretation of the term by each respondent.

Employment settings are places of occupational activity, job or work setting. Employment settings can vary greatly for job placements of an athletic trainer. The following are settings in which an AT could be employed:

- Working within a *clinic* would be defined as a rehabilitative facility.
- *Clinic/Outreach* includes working part time in a rehabilitative facility as well as at a high school or other scholastic athletics programs (ie. junior colleges).
- *College/University* athletic trainers work within the intercollegiate athletics division, typically with collegiate different sports teams. *College/University* athletic trainers could also be faculty that teach class classes and/or conduct scholarly research as well as practice clinically.
- *High school*s employ athletic trainers to work with the adolescent student-athletes at middle and secondary schools.
- *Industrial* refers to athletic trainers who work for companies to "develop and manage programs designed to keep employees working at full capacity, improving company productivity, and even help reduce health care and insurance costs (NATA, 2010)."

- ATs working within a *hospital* setting work to improve the activity level of patients within this facility.
- The *physician extender* employment setting places an AT within a physician's office and helps to increase the efficiency of the facility by providing additional quality services (NATA, 2010).
- ATs that work with *professional sports* could range from the National Hockey League (NHL), National Basketball Association (NBA), National Football League etc. (NATA, 2010).

Master of Science in Athletic Training (MSAT) is a NATA-accredited post-professional athletic training program. Graduates of this type of program will obtain a master degree in an advanced AT focus program.

Professional preparation indicators are items on the Survey of Entry-Level Athletic Training Professionals that assess the subjects' environment and occurrences as a student. Items include self-reported cumulative grade point average (GPA), primary athletics division, completion of a clinical internship, number of attempts on the BOC exam, current enrollment in a post-professional NATA-accredited athletic training program, current enrollment in another type of post-professional graduate program, and employment as a graduate assistant athletic trainer.

Proficiency is the ability to perform a skill with expert correctness (NATA Education Council, 2006).

CHAPTER 2: REVIEW OF THE LITERATURE

This chapter provides an overview of previous research in the area of athletic training clinical education and reveals the issues pertinent to the problems chosen for this study. The primary peer-reviewed resources used in conducting this review of the literature were the *Journal of Athletic Training* and the *Athletic Training Education Journal,* which are readily accessible through online archives linked through the National Athletic Trainers' Association (NATA) website. Documents containing programmatic requirements, such as the NATA Athletic Training Educational Competencies, Board of Certification (BOC) Role Delineation, and the Commission on Accreditation of Athletic Training Education (CAATE) standards were also used as guideline references for the regulations for which Athletic Training Programs (ATP) are held accountable. The chapter will begin with an overview of the profession of athletic training, history and education development, and an overview of athletic training education, including a description of the components that make up clinical education, clinical instructors and clinical sites for athletic training education. This chapter will conclude with description and review of theories of student engagement and active learning.

Clinical education is a vital part of an athletic training curriculum and has a key role in preparing athletic training students (ATSs) for future jobs (Laurent & Weidner, 2001). This experience gives ATSs opportunities to be a part of a real-world athletic training setting. The variables, clinical instructors and clinical education sites, are points of increasing interest in athletic training research and indicators of concerns for making

this experience most beneficial for athletic training students in order to best prepare them for real-world patient care.

History and Development of the Profession of Athletic Training

The early nineteenth century is when the emergence of the first modern day athletic trainer can be found. Coincidentally, the formation of intercollegiate and interscholastic athletics programs was taking place at the same time (Prentice, 2003). With no formal training nor any technical skills or knowledge, Prentice notes that these individuals would "rub down" the athletes as a treatment method, sometimes using analgesic creams, home remedies, or poultices.

The evolution of the field of athletic training follows the formation and revisions to the organization of the National Athletic Trainers' Association (NATA) (Delforge & Behnke, 1999). The NATA was established in 1950 with an original mission to establish professional standards. Soon thereafter plans were initiated to develop programs to target athletic training education (Delforge & Behnke; Prentice, 2003).

The NATA is a professional association with a membership that prides itself on the advocacy of athletic training and improving the quality of care provided by athletic trainers through ongoing professional development (NATA, 2009). Today, NATA membership has an annual fee, but offers incentives and discounts towards Continuing Education Units (CEUs) which are required bi-annually for ATs to maintain the athletic training certification by the Board of Certification (BOC). The NATA creates a venue for professional networking and provides its members with print copies of the *Journal of Athletic Training*. Through the organization's website, athletic trainers can access a

career center containing athletic training job postings, as well as many other helpful reference tools.

Athletic Training Education curriculum developed through the 1950s with the first educational curriculum model approved by the NATA Board of Directors in 1959. Sparsely, athletic training began to permeate higher education institutions, but it wasn't until 1969 that the NATA officially recognized the first Athletic Training Programs (ATP). This was a momentous occurrence for the profession of athletic training. This was followed by a second historically significant event -- the development of a certification examination in 1970. These two events gave athletic training public recognition among the medical professions, upgrading its standards to align similarly with other health care fields (Delforge & Behnke, 1999).

Between the 1970s and 2000 students could meet the requirements to sit for the National Athletic Trainers' Association Board of Certification Exam (NATABOC) by two different means. One way was to successfully complete a minimal amount of classroom work and 1500 clinical apprenticeship hours, which was a more hands-on type of learning approach. The other route was a more didactically focused approach and only 600 to 800 hours of clinical experience (Weidner & Henning, 2002). These two pathways are referred to in the literature as the internship or curriculum routes to certification (Middlemas, Manning, Gazzillo, Young, 2001). Today, the clinical clock hour design has been removed and mandates now state that Athletic Training Students (ATSs) must have clinical experiences over the course of a minimum of two years, in a variety of clinical sites (CAATE, 2008). This revised standard also states that athletic

training students need experiences working with different populations, varying levels of risk, as well as formal classroom instruction with set content areas (CAATE, 2008).

Athletic Training Education Overview

According to the National Athletic Trainers' Association (NATA, 2009) there are 363 accredited entry-level and post-professional Athletic Training Programs (ATPs) in the United States. This section describes the different elements involved in athletic training education, such as accrediting standards, professional domains, and educational competencies.

Athletic Training Program Accreditation Standards

Entry-level programs are accredited by the Commission on Accreditation of Athletic Training Education (CAATE) which sets standards and guidelines that programs must follow. In order to be eligible for the Board of Certification (BOC) examination, candidates must be graduates of an accredited ATP. The standards place detailed stipulations on surrounding aspects of an ATP such as personnel, resources, operating policies, student records, clinical education, and so forth. The standards mandate curriculum considerations for both clinical and didactic, referred to in the standards as educational competencies, clinical proficiencies, and professional behaviors (CAATE, 2008).

Athletic Training Education Competencies

Educational and clinical requirements are based on the Athletic Training Education Competencies (NATA Education Council, 2006). The purpose of these competencies is to have a standard for which to prepare athletic trainers for entry-level

professional practice. The competencies are aligned within the athletic training curriculum by the athletic training education program's director and must be identifiable within the coursework to meet CAATE accreditation standards. The Athletic Training Education Competencies are divided into three behavioral classifications: cognitive, psychomotor, and clinical proficiencies. Cognitive competencies examine ATSs' knowledge and intellectual skills, while psychomotor pertains to their ability to manipulate and perform the necessary motor skills needed for athletic training clinical practice (NATA Education Council, 2006).

Clinical proficiencies are a set of clinical skills that involve the application of critical thinking and decision-making (NATA Education Council, 2006). ATSs must demonstrate these skills at a proficient level in order to graduate from a CAATE accredited ATP. These skills need to practiced and developed over time to demonstrate improvement to an expert level of correctness. Clinical proficiencies can be assessed either by simulated scenarios or real-time situations that may occur during a clinical experience.

The competencies are imparted to the ATSs through their classroom work, while the proficiency skills are also learned within the classroom, they are demonstrated and practiced while at their clinical experience sites. These proficiencies serve as the objectives for ATSs' clinical education, eliminating a mandated number of clinical clock hours (Weidner & Henning, 2002; NATA Education Council).

The classroom work provides a foundational knowledge. This knowledge is essential to treating patients in the clinical setting. The clinical experience not only

allows students to practice their psychomotor skills, but it also prepares them for the real world professional practice (Laurent & Weidner, 2002). The curricula needs to reflect the importance of both clinical and classroom experience. The CAATE accreditation standards state, "clinical experiences must provide students with opportunities to practice and integrate the cognitive learning, with the associated psychomotor skills requirements of the profession, to develop entry-level clinical proficiency and professional behavior as an Athletic Trainer as defined by the *NATA Educational Competencies* (CAATE, 2008)." When we look at the ATSs' required coursework, we can see the vast importance of the didactic educational component. Nonetheless, where athletic training students have the opportunity to apply this knowledge and put their skills to practical use takes place in the clinical experience setting.

The domain of Professional Behavior, referred to by CAATE previously as the Affective Domain, the NATA Education Council revised to create seven topic areas of Foundational Behaviors of Professional Practice in the 4th edition of the *Athletic Training Educational Competencies* (2006). These principles depict the values of the athletic training profession that are intertwined throughout every aspect of the profession and are considered necessary professional behaviors for effective practice. The seven Foundational Behaviors of Professional Practice are: primacy of the patient, teamed approach to practice, legal practice, ethical practice, advancing knowledge, cultural competence, and professionalism. Within these seven subject areas are twenty-seven items that explain the necessary skills for each category. ATP curriculums need to incorporate these concepts into their coursework and clinical practice in order to ensure

educating students to the ethical and professional demeanor necessary for the profession practice.

CAATE places standards on most aspects surrounding athletic training education varying from personnel requirements, physical resources, operational policies and fair practice, to health and safety and student records.

BOC Role Delineation

The BOC Role Delineation provided a final piece of the structure and organization for athletic training education. It established the six major practice domains of athletic training: prevention, clinical evaluation and diagnosis, immediate care, treatment, rehabilitation and reconditioning, organization/administration and professional responsibilities (BOC, 2004). These domains establish frameworks for conceptualizing professional athletic training practice and they are therefore are the foundation on which an ATP builds its curriculum. By the time an ATS graduates from an ATP, their education should have been adequate enough that they can confidently professionally practice in in each of these domain areas.

Clinical Education

Clinical education is the opportunity for ATSs to apply their classroom knowledge and psychomotor skills on real patients and real-world situations, under the supervision of a clinical instructor. Clinical experiences are essential in developing a professional that can integrate textbook knowledge and apply it to clinical decision making and actual patient care.

CAATE standards are in place that state, ATSs must have the opportunity to be exposed to a variety of different populations, settings, varying levels of risk, equipment intensive sports, and general medical experiences (CAATE Standard J3.3). This stipulation helps to ensure that ATSs are gaining a well-rounded clinical education and various patient-care exposures enabling them to be prepared for whatever professional practice venue they choose. Stipulations are also mandated that clinical instructor go through an Approved Clinical Instructor (ACI) training seminar every three years.

Clinical Instructors

Clinical Instructors (CIs) are an integral aspect of a student's clinical education (Henning, 2008). CAATE standard J6 mandates that a minimum of 75% of ATS clinical education must be completed under the supervision of an AT. In 2001, changes were made to require clinical instructors receive professional training in order to hold this credential and to amend their designation to be ACI (Weidner & Henning, 2002). The content areas for ACI training and necessary qualification are described in the CAATE Standards. Qualifications include: a minimum of one year credentialed in a health care profession and not be currently enrolled in an entry-level ATP. Additionally, the *Athletic Training Educational Competencies and Clinical Proficiencies* need to be instructed and evaluated by an ACI (CAATE, 2008).

An ACI or CI plays a pivotal role in actively engaging the students to learn, problem solve, discover on their own, improve and integrate their skills, and can help facilitate learning opportunities for students to grow as athletic trainers (Barnum et al., 2009). The ACI is an imperative part of a students' clinical experience. ATSs need to be

afforded opportunities to engage in practice instead of passively observing. ATSs should be practicing their skills and not just acting as manual labor workers solely doing menial tasks. Feedback and constructive criticism of clinical performance will potentially lead to improvements for the ATSs. Students should matriculate and grow through the experiences they gain through being incorporated into patient-care at their clinical experience sites (Weidner, Noble, & Pipkin, 2006).

The responsibility of CIs is twofold; primarily, the care of the patients and secondarily, to supervise ATSs. Knight (2006) brought up questions about whether these individuals are clinicians, or educators? Clinicians may not function in a traditional sense of a teacher in a classroom, but they have a major impact in the education of ATSs. The role of these athletic trainers should be titled 'clinical educators' denoting the duality of their position and also making note of their importance in the education of the ATS who work with them (Knight, 2006).

Another standard that is crucial regarding ACIs and CIs pertains to how they supervise the ATSs assigned to them (Weidner & Pipkin, 2002). According to CAATE (2008), direct supervision is defined as constant visual and auditory interactions between the ACI/CI and ATS. A fine line exists between the constant interaction and allowing the ATSs autonomy to utilize their critical thinking and decision making skills in the clinical setting. This is not only a standard by the accrediting body, but is a legal liability that is depicted in state practice acts as a necessity (CAATE, 2008). Unlicensed or uncertified clinicians practicing athletic training are prohibited under these bylaws and potentially place the institution in precarious situation if a suit were to be filed. Clinical experiences

are the golden chance for ATSs to apply their knowledge, but their CIs must allow them some freedom. CIs must find a middle ground between hovering or hand-holding which stifles the opportunity to think independently versus an unprotected and unsafe lack of supervision. Knight (2008) suggests a method that allows autonomy along with direct supervision. He recommends that CIs attentively watch and listen to ATSs performing skills, but remain able to intervene if necessary, thereby allowing the ATSs to practice the thought processes independently (Knight).

Using ATSs' perceptions, Weidner, Noble, and Pipkin (2006) conducted an investigation to determine the type and amount of clinical supervision ATSs received while at the clinical experience sites. The study used 851 ATSs from 124 ATPs. The subjects were in their sophomore through senior years of their entry-level education. One part of the instrument, a student survey, was comprised of three sections: academic information, first aider/provider qualifications, and medical coverage and supervision of ATSs. The results demonstrate that 32.4% of the ATSs reported providing medical care and athletic training-related services without supervision, 19.2% covered practice unsupervised, and 40.2% traveled to away competitions unsupervised. The authors conclude that the results suggest that ATSs are not being appropriately supervised and are often acting outside of the scope of a first aider when unsupervised (Weidner, et al., 2006).

Unfortunately, it does not appear that the survey conducted by Weidner and his colleagues addressed the perceptions of the ATSs about the adequacy of their clinical preparation. The stated objective was to determine ATSs perceptions, but the questions

address topics like possessing Cardiopulmonary Resuscitation (CPR) Certification, providing medical care beyond first-aid, and time covering practices unsupervised. These questions do not appear to assess perceptions of clinical education preparation adequacy directly rather the ATSs were reporting facts about what occurred during ATSs' time at their clinical sites.

Another interesting aspect of the study reported by Weidner and his colleagues (2006) is that through their responses to the survey items it is apparent that ATSs are functioning in clinical sites unsupervised. It is a state practice act and CAATE standard violation for ATSs to be practicing any type of athletic training skills or providing athletic training services above that of a first-aider when there is not an ATC in direct supervision. This situation is a liability for the institutions, athletics departments, ATPs, and the CIs who was supposed to be providing supervision. ATSs should not be providing care beyond the scope of their clinical education (Weidner, Noble, & Pipkin, 2006).

Weidner and Pipkin (2002) also observed some shocking results in an earlier study about clinical supervision of athletic training students. The results from surveying head athletic trainers showed that 59.8% had allowed ATSs to provide medical care and perform athletic training skills without the direct supervision of a Certified Athletic Trainer. These results leave great concern in the hands of athletic training educators. Supervision is essential, both legally and from an educational standpoint.

CIs model behaviors, according to Curtis, Helion, and Domsohn (1998) that influence the ATSs' attitudes and feelings about their clinical education. From their

study, ATSs identified explanation, demonstration, and constructive feedback to be helpful behaviors of their CI while CIs being unavailable or missing learning opportunities were said to be hindrances. This research can lead athletic training educators and clinical instructor educators to better prepare CIs to work with their ATSs.

Weidner and Henning (2004) took this idea a step further and attempted to develop standard criteria to evaluate ACIs' skills and behaviors. The intent was to provide a tool for selection, education, evaluation, and gaining an understanding of clinical education requirements. The seven content areas these researchers developed are: legal and ethical behavior, communication skills, interpersonal relationships, instructional skills, supervisory and administrative skills, evaluation of performance, and clinical skill and knowledge (Weidner & Henning).

Lauber and Killian (2009) utilized the information previously gathered from Weidner and Henning's (2004) study and other allied health care literature to develop the Clinical Instructor Behavior Instrument (CIBI). This instrument is a psychometric tool that quantifies interpersonal and professional behaviors demonstrated by clinical instructors (Lauber & Killian). The researchers' article discusses the development of this instrument and its review by an expert panel. The CIBI quantifies personality characteristics and interpersonal behaviors between an Approved Clinical Instructor (ACI) and his/her students. The two categories, interpersonal skills and professional behaviors, both demonstrated high reliability, with Cronbach's alpha of 0.90 (Lauber & Killian).

ATPs utilize clinical sites spanning the different intercollegiate athletic programs, secondary schools, physicians' practices, hospitals, rehabilitation facilities and other health care facilities. Typically, each clinical site will have a different ACI, or an ACI will be responsible for two sports in different seasons. This leads to multiple ACI/CI to ATS interactions overtime. This situation also adds to the opportunity for variety in engaging with a different supervisor. ACIs differ in what they bring to the workplace, with their unique backgrounds, varying post-professional degrees, differing philosophies of patient care, and personal experiences. ATSs will learn different things from working with different supervisors. The variety of exposure to clinical supervisors will hopefully contribute to a more well-rounded clinical preparation.

ATSs' learning styles vary. Accordingly, the type of clinical instruction that coincides best with each learning style will also vary. Therefore providing the ATSs with a variety of ACIs/CIs to interact with is an important point to consider for their learning (Miller & Berry, 2002). Weidner and Henning (2005) point out in their research the importance that CIs be knowledgeable and that their skills need to be current. The ATSs can learn a great deal from their CIs, so being current and able to make care decisions that are grounded in evidence-based practice is crucial.

As compared to classroom educators, collegiate CIs experience role strain between clinician/health care provider, clinical educator, and administrator (Henning & Weidner, 2008). These same authors also suggest ways for ATPs to extrinsically reward their ACIs for serving these multifaceted roles, such as campus privileges, recognition, university apparel, or types of financial incentives for things like continuing education

units. Although some of these suggestions may not seem realistic, it is something to ponder for athletic training program directors and administrators.

As educators to the ATSs whom they are supervising, CIs and ACIs have a special and very important interaction in working with the ATSs in this real life environment (Knight, 2006). Clinical Instructors (CIs) need to foster self-discovery and facilitate learning opportunities for the students as well as be able to evaluate and help the ATSs improve their skills (Laurent & Weidner, 2001). Knight (2008) points out that often ATS are placed under the supervision of CIs that have little interest in their development or clinical education needs. CIs are assigned to have ATSs with them by the ATP's Clinical Coordinator and/or Program Director. This is a matter of the number of ATSs that need to complete their clinical education versus the number of clinical supervisors/sites. Whether or not the CI has a strong desire to work with ATSs is not typically factored into the assignment. This also creates a balancing act between the ratio of ATSs to ACI/CI, raising questions about how this ratio might affect the quality of the clinical experience.

At some colleges and universities athletic trainers work in two separate departments: athletics and academics (Carr & Drummond, 2002). Having this split appointment, separates the role of education between two different department areas; academic faculty and clinical AT staff. A collaborative effort is needed from both parties in order to educate and evaluate the performance of the ATSs most effectively. Carr and Drummond observed that the working relationship of the two differing roles of the clinical and classroom educators has an impact on the quality of the education. If there is

a mutual effort from both sides, the educational environment can be strongly enhanced. The researchers go on to suggest that in order for collaborative teaching to be effective, both educators should discuss engaging as a team and communicate freely about teaching philosophies and methods .

Feedback and constructive criticism of clinical performance is believed to potentially lead to improvements for the ATSs (Weidner & Pipkin, 2002). Progress of a student's learning should be monitored over the course of the clinical experience (Weidner & Pipkin). Students should progress and grow through the experiences that they gain through interactions at their sites. Knight (2008) applies the term "progressive skill development" to this principle, stating that it is essential in the development of entry-level practitioners. New graduates may demonstrate a wealth of knowledge, but being able to autonomously make clinical decisions is the ultimate test of their development (Knight). Fostering this ability needs to be considered when ATSs are progressing through their clinical experiences.

Clinical Education Sites

Another component of clinical education is the actual clinical site. As per the CAATE (2008) standards, ATSs are required to complete clinical education in a variety of different settings. These affiliations must include sports that are upper-extremity intensive, lower-extremity intensive, both genders, equipment intensive/collision, and a general medical experience (CAATE). By experiencing an assortment of clinical sites, ATSs will hopefully see a broader spectrum of injuries and pathologies along with the

differing logistical aspects of covering certain sports, preparing ATSs for a wide array of job placements (CAATE).

Miller and Berry (2002) agree with this CAATE standard and feel that the importance is to expose ATS to more opportunities to learn. At each clinical setting, CIs may use varying treatment options and how patients respond to treatments can differ. Experiencing this variety will show ATSs more of an array of ideas for how to treat different pathologies.

This researcher raises a question regarding the variety of sports experiences in relationship to the difficulty of the coursework load. Information pertaining to this concept has not been addressed in the athletic training education literature. For ATSs that would be working with a sport like football, which is very time consuming and demanding, it could be beneficial to the students if the coursework load taken during that semester be slightly less intensive. If this is a possibility to arrange within the curriculum it could seriously lessen the stress and strain on the students. There are only so many hours in the day and when a clinical experience takes up a substantial part of that time, coursework can fall second.

Miller and Berry (2002) attempted to quantify the amount of time ATSs spent actively learning while at their clinical sites. Although generalizability of their results may be limited, they found a significant difference in engaged learning time when comparing sports associated with clinical site placements. They did speculate that the significant difference could be due to the CIs' clinical emphasis or the ATSs comfort

level or familiarity with the anatomical structure (whether upper or lower extremity). This research adds justification for placing the ATSs in a range of clinical settings.

Engagement and Active Learning

Miller and Berry (2002) make a powerful statement that sums up the goal of clinical experience:

> The challenge for contemporary educators is to optimize the productivity of the clinical placement to ensure the learning and comprehension of educational and clinical competencies rather than the mere application of skills and behaviors (p. 232).

Learning is the process of gaining an understanding where one must associate new information with known ideas and concepts (Kuh, 2005). In his text, Kuh (2005) also states that knowledge is not transmitted; it is constructed because of a learner's activities, also known as active knowledge construction. Learning will be minimal and easily forgotten if students solely sit in a classroom and listen to lectures and presentations. Information and concepts can be taught by lecture, but the students then must be asked to engage within the material of the class. By using such teaching methods like; group investigation, role playing, lab activities, small group presentations, and clinical education forces the students to be active participants in the learning process (Joyce, Weil, & Calhoun, 2004). The beauty of athletic training education is the potential for active, clinical learning.

Locke's theory on learning states that babies are born as blank slates, with certain potentials to learn (Phillips & Soltis, 2004). Infants possess various capacities that allow

learning to take place and after birth their senses begin to have experiences with their environment (Phillips & Soltis, 2004). In the text, Phillips and Soltis, (2004) refer to this capacity as part of the biological equipment that we are born with and wired for. Locke's concept that we learn through our experiences is compelling. It provides direct support for the concept of gaining clinical competencies through engagement and active learning.

Kuh's (2005) ideas coincide with the intended purpose of clinical education. ATSs spend many hours at their clinical sites, but the whole point of this required experience is to be practically applying the didactic skills and knowledge from the classroom, to real patients and situations. Actively engaging the students to learn, problem solve, and discover on their own can help them grow as athletic trainers (Berry, Miller, & Berry, 2004).

Increasing the number of hours ATSs are at their clinical sites in the hopes that this would also increase the number of learning opportunities does not necessarily mean that we are increasing the quality of their clinical education (Miller & Berry, 2002). As of January, 2004 the BOC no longer has a required number of clinical clock hours in order to be eligible to sit for the examination (Laurent & Weidner, 2002). This changes the mindset of a given quantity of clinical hours and turns the focus to the quality of the clinical experience (Laurent & Weidner). The indicative marker for quality of clinical education is having the ATSs complete clinical proficiencies (Laurent & Weidner).

At times ATSs at clinical sites are used to do unappealing, managerial tasks like preparing water and ice, instead of being involved with treating the patients. Although these are less significant tasks that need to be done, they are not aiding in the ATSs'

education. Miller and Berry (2002) attempted to quantify and assess the hours ATSs spent at their clinical placement sites to identify the percentage of time spent actually learning. Two students were hired to videotape the ATSs at their clinical sites and then the recordings were analyzed using the Behavior Evaluation and Taxonomies software. For scoring the ATSs activities at the clinical placement, the researchers used a conceptual behavioral time framework. For the framework the investigators used some of the academic learning time items that were identified in other literature (Miller & Berry, 2002) along with performance domains and essential tasks that were established by the Board of Certification (BOC). The investigators used twenty ATSs currently enrolled at one accredited ATP located in the Midwestern United States. The university was a NCAA Division I school and included placements with intramural sports, local high schools, intercollegiate varsity athletics. The students were scheduled to be videotaped for four hours, the average length of one day of clinical experience, about one month into the quarter.

The researchers found that 7% of ATSs' time was actually engaged in instructional activities, 23% in clinical activities, 10% in managerial activities, and 59% unengaged. Unengaged was defined by the researchers as, "time spent performing behaviors seemingly unrelated to athletic training that appear to offer no apparent educational or clinical value, such as waiting, bathroom breaks, and social behavior (e.g. discussing events outside of athletic training, performing tasks unrelated to athletic training." There is justification to their claim that clinical experience is not about the

quantity but rather the quality (Miller & Berry). Miller and Berry comment that this study is the first to attempt to quantify clinical experience time (Miller & Berry, 2002).

A possible limitation of the research is that the students were only videotaped one time. For example on that one particular day, there could have not been many patients that needed treatment or the ACI could have been preoccupied with handling other issues, an athlete's insurance company and not been solely focused on working with his/her students.

In the profession of athletic training, each day's events cannot be predicted, i.e the number of injuries that occur or problems that arise. To counteract this, the researchers could have videotaped several days and then taken an average score of the analysis to more accurately represent an "average" of how students spend their time at clinical placements. Another limiting factor in this research was that were the students acting as they normally would at the clinical site or was there variation due to them knowing that they were being filmed? When people know that someone is watching, their behaviors tend to vary (Miller & Berry, 2002). Changes from normal behavior would substantially affect the validity of the study. A solution to this problem is difficult to find. By filming the ATSs it gives the researchers a true picture of what is taking place, but is the picture that they are receiving may or may not be the same when the cameramen was not present. This study has a good concept and if aspects of the methods could be modified a significant outcome could result.

Another research study conducted by Berry, Miller, and Berry (2004), with the same objective, to examine how ATSs spend their clinical placement time; however, in

this study the researchers wanted to use the perceptions of the ATSs. The researchers actually modified the conceptual behavioral time framework that was created by Miller and Berry (2002) in the previously discussed study. Modifications were made to provide more clear definitions for the time categories and adding two more specific categories. The measurement tool is now called the Athletic Training-Clinical Education Time Framework (AT-CETF) and was used to measure the perceptions of the ATSs about their time spent at clinical placement sites.

The investigators sent the surveys to all of the 131 CAAHEP-accredited ATPs in the United States. Of the programs, 25 participated in the study, totaling 177 ATSs that completed and returned the surveys. The results of the survey concluded that ATSs perceived that 51% of their time was spent in engaged active learning, 9% managerial activities, 17% unengaged activities, and 23% waiting activities. Waiting time is defined as "attentively observing" and unengaged time means that the ATSs were not performing any "cognitive, psychomotor, or affective skills/behaviors as related to athletic training." From this larger sample population and modified measurement tool, the results appear that the clinical experiences are providing a more reasonable amount of engaged learning activities (Berry, Miller, & Berry, 2004).

The modifications that were made to the conceptual behavioral time frame work, or AT-CETF, appear to make this measurement tool very specific to athletic training (Berry, Miller, & Berry, 2004). The results appear rather profound since the researchers were measuring the perceptions of their subjects, those who experienced the phenomenon first hand. The ATSs are the ones that know if they are being engaged and actively

learning or not, so how they see the situation is really measuring what it should. The researchers did a great deal of work in recruiting subjects for this study. Using 131 ATPs in the country and gave incite to this issue from a global perspective as a whole profession. Another highlight was the attention to detail for the day that was used for the ATSs observation and assessment of their clinical site. The researchers defined in the survey packet that the ATSs were to select an observation day with their normal clinical supervisor for a regularly scheduled practice that did not proceed or follow an athletic contest (Berry, Miller, & Berry). By making this stipulation, the researchers attempted to capture what an "average" day in the clinical setting entails.

It is interesting to note the differences between these two studies. Both had the same objective, but used different methods, and concluded with opposing results. In the first study with the videotaping the results showed 59% of their time unengaged, yet the later study revealed only 17%. The studies used different methods and the later study revised the measurement tool, which could possibly explain the varying outcomes. It would be interesting to use the second study with the AT-CETF and a different, possibly more stratified sample and see if similar results are found (Miller & Berry, 2002 and Berry, Miller, & Berry, 2004).

When looking a bit closer at this research using the ATSs perceptions, one might point out that only two or three of the surveys would be about the same experience. The results give a good general overall view of the situation, but if the study could be more individualized to each clinical site and each clinical instructor, specific flaws could be pointed out and changes could then be implemented to improve and enhance the clinical

experience. The instrument used in this study could be a tool implemented for program assessment and making continual improvements to the clinical education.

Further evidence to support this claim of quality versus quantity, Turocy et. Al (2000) did not find ATSs' clinical placement hours to be a predictor of the pass rates for the BOC Examination. Passing the BOC the ultimate goal and the benchmark indicator in the culmination of an ATS's classroom and clinical education, so it is significant to see that the number of clinical experience hours is not a determining factor.

Two other theories that should be applied to athletic training education are problem based learning and evidence based medicine. Problem based learning challenges students to actively learn how to learn and seek solutions to real world problems and situations, is a principle that aligns very well with the concept of this hands on profession (Kuh, 2005). Teaching the students information, while challenging them and allowing them the chance to figure out how to take that information to deal with a real problem, helps develop them into critical thinking, problem solving clinicians (Kuh, 2005).

Evidence base medicine (EBM) is the use of the most current and best evidence to make a decision about the care of each patient (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996). For a clinician to practice evidence based medicine, they need to combine the expertise that they have gained through their experiences, along with the best gathered external clinical evidence, both collected through the clinical evaluation and evidence from clinically relevant research and apply this to make the best decision for the care of their patients (Sackett, et. al). Situating students in an environment with meaningful context using real world problems is the foundation for problem based

learning (PBL) (Hmelo, 1998). This classroom methodology allows students to transfer their knowledge by applying it solve realistic and meaningful problems (Hmelo, 1998). Working together in small groups, a collaborative learning method, students are motivated by the opportunity to put their knowledge to practical use (Amador, Miles, & Peters, 2006). This opportunity to transfer their knowledge, gives student the experience to apply these skills to working at their clinical experience site.

If we have an athlete that sustains a particular injury and the students get to "experience" that injury first hand; what the mechanism was, the signs/symptoms, the positive special tests etc, they are almost always going to recognize that injury if it occurs again. The first hand experiences that occur within the clinical experience setting are something irreplaceable and are hard to erase from one's memory. This theory also reinforces the whole principle of the clinical experience within an ATP.

Gaining Confidence in Clinical Practice

The motive in any professional health care education program is to develop competent and confident entry-level professionals. The idea of developing confidence for professional practice is well illustrated in other health care fields such as, medicine, physical therapy, chiropractic, nursing and others. In the literature, confidence is defined as the belief in oneself in the ability to complete tasks and handle situations well (Hecimovich & Volet, 2009). Self-efficacy is a very closely related term to confidence and the literature explains that the two terms are too interrelated to make clear distinctions or differentiations. We can apply this definition in solving the dilemma about how we build confidence in our students for effective practice?

In a review of the literature view, Hecimovich and Volet (2009) identified several contributing concepts that could foster students' development of confidence in clinical practice. Students' perceived confidence was found to improve when they were provided with clinical learning opportunities and ample practical clinical experience. For AT, proper clinical experience should provide similar potential. Throughout clinical education it is also important that students learn how to autonomously think and critically analyze problems to solve them in the most effective and most appropriate way possible. Using a problem-based learning approach, a clinical instructor can effectively mentor students to help increase their confidence in clinical practice. Additionally, this review found that health care education programs (specifically in chiropractic education) have seen positive results in students' confidence after being immersed in as internship or preceptorship (Hecimovich & Volet, 2009 and Ebbets, 2002).

CHAPTER 3: METHODS

The purpose of this study was to investigate entry-level practicing ATs' perceived adequacy of their clinical education preparation and confidence to practice athletic training. Additionally, the investigation looked at demographic characteristics and various professional preparation indicators as independent variables. This study used a descriptive and correlational design. Descriptive research was used in this study as a form of assessment and evaluation, using non-manipulated variables, with outcomes allowing for generalizations (Best & Kahn, 2006). Variables that already existed among the participants were used with an attempt to draw conclusions between and among these items (Best & Kahn). A survey was used to collect information from employed, entry-level athletic trainers within two years of graduating from their entry-level ATPs. This chapter will explain the methods that were used to complete this investigation including operational definitions of variables, instrument design, reliability and validity testing, identification of the population, sampling procedure, limitations, grant funding, procedures, Ohio University Institutional Review Board (IRB) process, and data analysis.

Operational Definition of Variables

Independent variables: Gender, primary collegiate athletics division, cumulative grade point average (GPA), number of attempts to pass the Board of Certification exam, completion of a clinical internship, currently enrolled in a post-professional ATP or other post-professional degree programs, and current place of employment, including being employed as a graduate assistant AT.

Dependent variables: Subjects' perceived adequacy of clinical education, confidence to practice athletic training, and Adequacy Confidence Index (A-CI), which is a summative score of all survey items combined.

Survey Instrument

The questions on the survey instrument were designed to address the proposed hypotheses, which follow directly from the research questions. The survey consisted of two sections. The first section gathered information about subjects' demographics and professional preparation indicators. The second section was an attitudinal questionnaire containing two concepts; perceptions of adequacy regarding clinical education preparation and confidence to practice athletic training (see Appendix A).

Part one of the instrument, titled "Demographics and Additional Information" contains questions aimed at gaining demographics, descriptive data, and information identified as 'professional preparation indicators.' Professional preparation indicators were items on the instrument that asked questions about the subjects' environment and occurrences experienced as an ATS including such things as; cumulative GPA, number of attempts to pass the BOC examination, primary athletics division, number of BOC attempts, completion of a clinical internship, currently enrolled in a master of science in athletic training (MSAT) program or other post-professional program, and current place of employment.

Part two of the instrument titled, "Clinical Education Perceptions" used a five item Likert attitudinal scale, ranging from 'strongly agree' to 'strongly disagree,' to quantify the participants' perceptions as athletic training students on their clinical

educational experiences and confidence to practice athletic training based on the professional practice domains. These items were randomly arranged to vary the questions and both positively and negatively phrased to reduce habituation. It was estimated the questionnaire would take ten to fifteen minutes to complete.

In designing the instrument, the researcher utilized a gap analysis to identify a well-rounded survey that contained questions focusing on the six professional practice domains regarding both perceptions of adequacy and confidence to practice athletic training (see Table 1). The analysis gave a visual representation identifying an equal distribution of the questions for each domain. Once the instrument was designed, Ohio University Institutional Review Board approval was applied for and granted.

Table 1

Alignment of Survey Items by Professional Practice Domains and Dependent Variable

Professional Domains of Athletic Training	Perceived Adequacy of Clinical Education	Confidence to Practice Athletic Training
Prevention 1		13
Clinical Evaluation and Diagnosis	3	12
Immediate Care	5	2 & 8
Treatment, Rehabilitation, and Reconditioning	7 & 10	4 & 15
Organization and Administration	9	6
Professional Responsibility	11	14

Instrument Validity and Reliability Testing

An expert panel was assembled to test the validity of the instrument. The panel was comprised of experienced athletic training professionals who have a command of the

knowledge pertaining to athletic training education and one individual who additionally specializes in survey development. Dr. Brian Hortz and Dr. Eric Winters are alumni of Ohio University's Athletic Training Program and are close colleagues of Dr. Andrew Krause, dissertation committee member. Dr. Hortz and Dr. Winters have been athletic training educators for over 16 years and are currently associate professors at Denison University. Dr. Hortz also has a background in survey design. Dr. Krause also served on this expert panel. He has been a Clinical Instructor Educator at Ohio University since 2004 and is well-versed in the standards of athletic training education.

The panel was contacted on April 21, 2010 via email which contained a link to the electronic version of the instrument on survey monkey, and two attachments: (1) a word document version of the instrument and (2) a cover memo explaining the investigation and requesting feedback on the instrument. A table was used for the panel members to identify if they felt the survey questions adequately represented each professional practice domain (see Appendix B). Each member could mark "yes" or "no" and provide feedback for revisions.

With 100% response rate, all three expert panel members returned the validity tool and feedback to the investigator by May 19, 2010. The main concern of the expert panel members were questions that were double-barreled. Although the professional practice domains are presented as multiple related areas within a single domain, revisions needed to be made to make the survey questions clear and concise to the participants. These areas of concern were used to revise the instrument. The instrument was also revised in survey monkey.

The professional practice domain "treatment, rehabilitation, and recondition" underwent changes after feedback from the expert panel (see Table 2). This domain encompasses the ideas of both designing and implementing treatment, rehabilitation, and reconditioning programs, questions were created and divided to make this idea clearer to the participants.

The researcher also met with Dr. Chad Starkey, a leader and innovator in the AT education field. Suggestions were given that helped clean-up the wording of the questions to make most clear and straightforward to the subjects. Other feedback helped find the most appropriate and best solutions for the double-barreled question issue (see Table 2).

Once the instrument was revised, a test re-test reliability pilot study was conducted with a convenient sample of forty-five Ohio University athletic training graduate students. In the first attempt 22 graduate MSAT students were contacted from the graduating class of 2010. For both the test and re-test, an initial email was sent out and a follow-up reminder email was distributed ten days later. Out of the sample of 22, five subjects completed the test, but not the re-test and two completed only the re-test leaving five viable data sets for analysis yielding a response rate of 22.73% for the first pilot testing attempt.

Due to this low response rate, 23 additional MSAT students were recruited from the graduating classes of 2011 and 2012 for the second pilot study attempt. The same procedure was used to contact the subjects and a reminder email followed ten days later for both the test and re-test contacts. Five participants were excluded because they only

completed the test portion of the reliability assessment. This yielded 14 completed tests, re-tests data sets tallying a response rate of 60.87%. Combined the pilot studies totaled nineteen subjects who completed both the test and re-test tallying a response rate 42.22%. Analysis of the pilot data; Cronbach's alpha was 0.862 and an interclass correlation of 0.868.

Through the pilot testing, a careless duplication error was found and deleted. Also, some re-wording was done to more appropriately state the professional practice domains (see Table 2).

Finally, an IRB amendment was submitted with the revised survey instrument. Table 2 illustrates how the survey items evolved through the feedback and data gathered through the reliability and validity testing.

Table 2

Evolution of Survey Items

I. Original Version	II. Revision after validity testing	III. Revision after reliability testing
1. My clinical education was adequate in preparing me to deal with the prevention of athletic injuries.	1. My clinical education was adequate in preparing me to prevent injuries.	1. My clinical education was adequate in preparing me to prevent injuries.
2. I am not confident in my abilities to handle emergency situations in a clinical setting.	2. I am not confident in my abilities to provide emergency care in my role as an athletic trainer.	2. I am not confident in my abilities to provide emergency care in my role as an athletic trainer.
3. My clinical education was adequate in preparing me to examine and diagnose injuries.	3. My clinical education adequately prepared me to diagnose injuries.	3. My clinical education adequately prepared me to diagnose injuries.
	15. My clinical education was adequate in preparing me to diagnose injuries.	Delete- error and unnecessary duplication
4. I am confident in my abilities to design and implement treatment and rehabilitations	4. I am confident in my abilities to design treatment, rehabilitation, and reconditioning programs.	4. I am confident in my abilities to design treatment, rehabilitation, and reconditioning programs.
5. My clinical education was not adequate in preparing me to provide immediate care to injured patients.	5. My clinical education was not adequate in preparing me to provide immediate care to injured patients.	5. My clinical education was not adequate in preparing me to provide immediate care to injured patients.
6. I am confident in my abilities to complete athletic training administrative tasks.	6. I am confident in my abilities to complete athletic training administrative tasks.	6. I am confident in my abilities to complete athletic training administrative tasks.
7. My clinical education was adequate in preparing me to design and implement treatment and rehabilitation programs.	7. My clinical education was adequate in preparing me to design treatment, rehabilitation, and reconditioning programs.	7. My clinical education was adequate in preparing me to design treatment, rehabilitation, and reconditioning programs.

Table 2 (continued)

I. Original Version	II. Revision after validity testing	III. Revision after reliability testing
	10. My clinical education was adequate in preparing me to implement treatment, rehabilitation, and reconditioning programs.	10. My clinical education was adequate in preparing me to implement treatment, rehabilitation, and reconditioning programs.
8. I am confident in making immediate patient care decisions on my own.	16. I am confident in my abilities to implement treatment, rehabilitation, and reconditioning programs.	15. I am confident in my abilities to implement treatment, rehabilitation, and reconditioning programs.
9. My clinical education was adequate in preparing me to complete administrative and organizational functions of an athletic trainer.	8. I am confident in making immediate patient care decisions on my own.	8. I am confident in making immediate patient care decisions on my own.
10. My clinical education was not adequate in preparing me to deal with professional responsibilities.	9. My clinical education was adequate in preparing me to complete the administrative functions of an athletic trainer.	9. My clinical education was adequate in preparing me to complete the administrative functions of an athletic trainer.
11. I am confident in my abilities to examine and diagnose orthopedic injuries.	11. My clinical education was not adequate in preparing me professional development.	11. My clinical education was not adequate in preparing me for professional development.
12. My clinical education has adequately prepared me for dealing with emergency situations in the athletic training setting.	12. I am confident in my abilities to diagnose injuries.	12. I am confident in my abilities to diagnose injuries.
13. I am confident in my abilities to implement injury prevention techniques.	Delete- combined between numbers 2, 5, & 8	
14. I am confident in my abilities to maintain necessary athletic training professional responsibilities.	13. I am confident in my abilities to implement injury prevention techniques.	13. I am confident in my abilities to implement injury prevention techniques.
	14. I am confident that I can perform the professional responsibilities of an athletic trainer well.	14. I am confident that I can perform the professional development required of an athletic trainer.
15. Overall, how would you rate the adequacy of your entire clinical education experience in preparing you for confident entry-level employment?	17. Overall, how would you rate the adequacy of your entire clinical education experience in preparing you for confident entry-level employment?	16. Overall, how would you rate the adequacy of your entire clinical education experience in preparing you for confident entry-level employment?

Identification of the Population

Participants consisted of Athletic Trainers (ATs) from across the United States who are members of the National Athletic Trainers' Association (NATA). Upon becoming a member of the NATA the individual must also have consented to be contacted for potential research recruitment. The ATs must be within two years post-graduation from an entry-level ATP and be currently employed and practicing as an athletic trainer in any given clinical setting. NATA members who were graduate students currently employed through an athletic training graduate assistantship were included in this study. Participants currently practicing AT and/or pursuing a post-professional degree were also included.

Sampling Procedure

Prospective participants were recruited from the NATA membership database. By virtue of the investigator being a member of the NATA, access to this directory was obtained by adhering to the license agreement for proper usage of the information. The NATA Membership office was contacted by the investigator to request a randomized sample of the given subject pool (see Appendix C).

When athletic trainers become members of the NATA they have the option to disallow their phone number or email address to be released for the purpose of participating in survey research. Accordingly, the researcher only had access to those members of the NATA who enabled the option that permits contact for participating in survey research. Participants were excluded if they: did not have an email address, were

more than two years post-graduation from their entry-level ATPs, were no longer working within the profession of athletic training, or not currently employed as an AT.

There are over 26,000 certified NATA members as of November 2009. Of that number, 592 are certified students (NATA, 2009). Certified students are athletic trainers who have passed the Board of Certification Exam (BOC) and are able to practice, but are currently continuing their education by pursuing some type of post-professional degree. The administrator at the NATA Membership office was able to gather 1,920 potential participants' email addresses. Unfortunately, due to either not being NATA members or declining the option to be contacted for survey research participation the sample was much smaller than expected.

The population was gathered from the NATA Membership office, then the participants were contacted via email and the survey was administered through a Survey Monkey account owned by the Ohio University Athletic Training Program, with which the researcher is currently affiliated as an employee.

Limitations

1. By using the NATA database, the researcher only had access to athletic trainers who were members of the NATA and allowed permission to be contacted for participation in survey research.
2. The demands and considerations for each entry-level athletic trainer's work environment (ie. lack of independence, not the primary decision maker in regards to patient care, etc.) could vary greatly depending on employment setting. This lack of standardization might have given the respondents different or skewed

perceptions of adequate clinical education preparation and confidence to practice athletic training.

3. Clinical education experiences are not standardized. Experiences ATSs have while at their clinical sites could vary greatly. The different injuries, pathologies, and conditions are random in occurrence and uncontrollable to make uniform for every ATS. Additionally, the different clinical site placement opportunities could vary depending on the higher education institution.

Grant Funding

The NATA Membership office charges $0.09 for each subject's email address over 1000 subjects. Since it was feasible for the investigator to utilize the entire available sample, to defray the cost, an application was submitted for the Ohio University College of Education Graduate Study and Educational Research Fund Grant. Funding was granted by the College of Education Research Committee and subject recruitment then proceeded.

Procedure

First, submission for approval of the investigation was submitted to Ohio University's Institutional Review Board (IRB). This investigation offered no monetary reward and had no foreseeable risks or benefits and was categorized as an exempt level of review by the IRB. Following approval, the researcher contacted the NATA membership office and requested a sample of subjects applying the above exclusionary criteria. The designed questionnaire was formatted into Survey Monkey. An implied consent form was the initial document, describing the purpose of the investigation and that no

foreseeable risks exist to participate in the study. Therefore once completing the survey, consent to use their data is inherently implied. A memo email regarding the purpose of the study was formatting and contained a link to the instrument on Survey Monkey. This email was sent to the administrator at the NATA Membership Office who then distributed the memo email with survey monkey link to the 1,920 subjects

The survey was sent to all participants. After ten days a follow-up email was sent to increase participation. No identifying information existed on the participants' responses.

Institutional Review Board

The Ohio University Office of Research Compliance deemed this investigation exempt from review by the Institutional Review Board (IRB) due to the lack of invasiveness and extremely low risk to the subjects. The subjects were fully informed of the purpose of the study and their participation was voluntary. Consent was inherent upon completing of the survey.

Anonymity was maintained because subjects' names or email addresses were not present on the completed surveys. All data collected through the instrument maintained confidential and limited access exists within the utilized Ohio University Athletic Training Program owned Survey Monkey account (see Appendix D).

Data Analysis

A descriptive and correlational research design was used in this study. Responses on the Likert scale were scored five for strongly agree through one for strongly disagree. Reverse coding was used for the negatively phrased items (questions 2, 5, and 11). Once

data collection was complete analysis was done using Statistical Package for Social Science (SPSS) version 18.0. Descriptive statistics identified information and characteristics about the respondents. Using total scores amongst the categories of perceived adequacy and confidence to practice AT values tabulated to analyze first two research questions. Total scores were also calculated by professional practice domain and each research question. The scores were then standardized. Responses of "strongly agree" and "agree" translated into adequate. "Neutral" responses were separated and "disagree" and "strongly disagree" responses translated into inadequate or not confident. The scoring was reversed for the negatively phrased items, numbers 2, 5, and 11. With the perceived adequacy of clinical education preparation and confidence to practice AT scores transformed and totaled, frequencies were used to compare to the independent variables. Bivariate correlations were used to analyze if relationship existed between the independent and dependent variables.

Summary of Methods

This investigation was a descriptive and correlational study that examined the perceptions of entry-level employed athletic trainers regarding their clinical education preparation for confident professional practice, and academic indicators and demographical information. The sample population was gathered through the NATA membership database and included ATs that were within two years of graduating from their entry-level program and are currently practicing in the field of athletic training. The survey contained two sections; the attitudinal section contained two parts, perceptions of entry-level practicing athletic trainers regarding adequacy of their clinical education and

confidence to practice athletic training. The second section gathered information about subjects' demographics and professional preparation indicators. The survey was administered using survey monkey and the data were coded and analyzed using SPSS 18.0.

CHAPTER 4: ANALYSIS OF DATA

Introduction

The purpose of this chapter is to present the results from this investigation. This investigation examined entry-level practitioners' perceptions of adequacy of clinical education in preparation confidence to practice AT. Recent ATSs, within two years of graduating from their entry-level ATP, who are currently employed in the athletic training profession were included in the study. This chapter reports: the research questions and procedures; and discusses results from the descriptive and demographic data, hypothesis testing, perceived adequacy of clinical education, perceived confidence to practice AT, and other additional findings.

The following research questions guided this study:

1. What are entry-level athletic trainers' perceptions of adequacy of clinical education preparation?
2. After certification, how do entry-level athletic trainers rate their level of confidence to practice?
3. What is the relationship between professional preparation indicators and entry-level athletic trainers' perceptions of adequacy of their clinical education and confidence to practice?

Research Procedures

This investigation surveyed a sample of all AT's who were NATA members and consented to be contacted to participate in survey research. Participants were required to

be within two years post-graduation from their entry-level athletic training programs and currently employed as an AT.

The NATA Membership office distributed the instrument to 1,920 athletic trainers, which included all possible subjects that were available within the database and met the inclusionary criteria. The initial mailing went out on August 27, 2010. A follow-up reminder email was sent on September 10, 2010 to attempt to increase the response rate. Of the e-mails sent, 46 were undeliverable. Due to insufficient completion of survey items, 10 responses were not used and 47 responses were excluded due to the subject not working within the AT profession. In total, the distribution yielded a response rate of 25.26%, 428 respondents; 136 males, 292 females.

Descriptive and Demographic Data

The descriptive and demographic data are presented in Table 3. The mean cumulative grade point average of respondents at the time of graduation was 3.47 (+/- 0.30); ranging from 4.0 to 2.6. Generally, ATPs have a cumulative GPA standard for students to remain enrolled in the program, this varies, but might explain why these numbers fall within and above the 'C+' range.

Figure 1 displays the distribution of the number of BOC examination attempts amongst the respondents. The number of attempts ranged from 1 to more than 4, with a mean of 1.43 (+/- 0.77). Out of all the respondents, 299 (69.9%) passed the exam in one attempt, 74 (17.3%) participants passed in two attempts. BOC pass rates vary from year to year, however it is positive to see that 87.2% of the respondents are passing the exam with two attempts, especially considering the exam costs $335 to $435 to take (BOC,

2010). Taking the exam three or more times may not have had any bearing on the respondents' perceptions of adequacy of their clinical education. Rather, they may have been influenced by personal variables. In prior research, investigators found that GPA was positively correlated to first attempt exam success (Middleman, Manning, Gazzillo, & Young, 2001). This investigation was conducted when a different BOC examination format existed and the internship route to certification was still utilized. In this dissertation investigation, only 39 (9%) respondents had cumulative GPAs of 3.0 or below and 55 (12%) respondents attempted the BOC three or more times. These findings appear to be in agreement with prior research, despite the differences of the times.

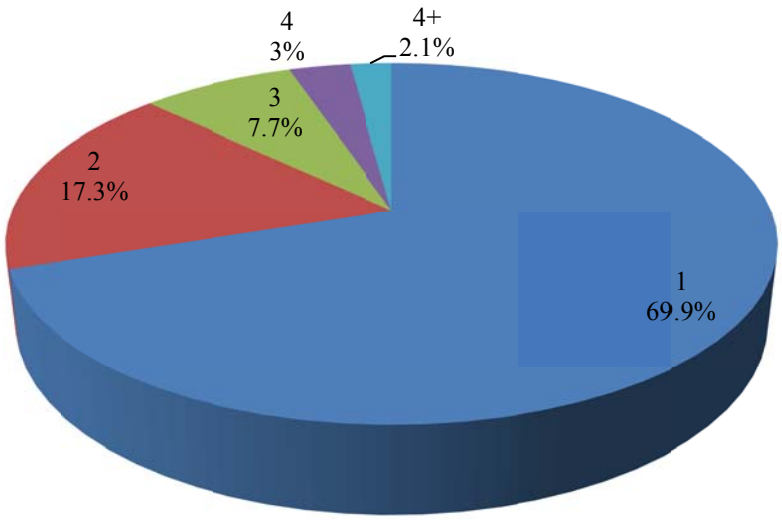

Figure 1. Distribution of the Number of BOC Attempts

Table 3

Descriptive Data

Independent Variables		Number of Respondents (%)
Gender	Males 136	(31.8%)
	Females 292	(68.2%)
Primary Athletics Division	NCAA I	207 (48.4%)
	NCAA II	88 (20.6%)
	NCAA III	114 (26.6%)
	NAIA 15	(3.5%)
BOC Exam Attempts	1 299	(69.9%)
	2 74	(17.3%)
	3 33	(7.7%)
	4 13	(3%)
	More than 4	9 (2.1%)
Completed a Clinical Internship	Yes	267 (62.4%)
	No 158	(36.9%)
Cumulative GPA	x = 3.47 (+/-0.30)	
Enrolled in Post-Professional NATA-accredited Athletic Training Program	Yes 80	(18.7%)
	No 348	(81.3%)
Enrolled in Other Post-Professional Graduate Program	Yes 146	(34.1%)
	No 279	(65.2%)
Employed as a Graduate Assistant AT	Yes	186 (43.5%)
	No 240	(56.1%)

n = 428

The majority of respondents, 207 (48.4%), completed their entry-level AT degrees at institutions with National Collegiate Athletics Association (NCAA) Division I membership. The number of respondents that attended NCAA Division II and III institutions only differed by 26 subjects; Division II totaling 88 subjects (20.6%) and Division III with 114 subjects (26.6%) (see Table 3).

Of the respondents, 267 (62.4%) com pleted a clinical internship while 158 (36.9%) did not. The internship route to cer tification has long been elim inated, however ATPs m ust be seeing positiv e re sults f rom i mmersing students in s upervised clinica l

internship e xperiences since the m ajority are inc luding this com ponent with in their clinical education curriculum . Cumulatively , 226 (52.6%) respondents were enrolled in some type of post-professional degree program. Of these 226 subjects, 186 were employed as a graduate assistan t ath letic trainer (see Table 3). Many of these graduate appointments offer a monetary stipend and/or tuition scholarship. It is positive to see that this educational opportunity and work expe rience would be possible for 82% of the respondents.

Distribu tion of employment settings are displayed in Table 4. The most popular employment setting response was in college/university (46.7%). Of all NATA members, 21% are employed in secondary schools. In 1998 policy recommendations from the American Medical Association (AMA) made priority that all secondary school with athletics programs have access to an Athletic Trainer (NATA, 2010). However, this investigation demonstrated only 125 (29.2%) to be employed in high schools (see Table 4). It would be expected recent AT graduates to be employed primarily in high schools or clinic/outreach positions. These job placements typically have minimal or no requirements for years of experience. However, since 43% of the respondents were employed as ATs through a graduate assistantship, possibly these positions are through colleges/universities.

It is interesting and concerning to note that 47 respondents, over 10%, were not currently employed as an AT (see Table 4). The respondents were only two years post entry-level graduation, so we would hope these young professionals would be active and employed within the profession. It is uncertain whether these individuals chose to pursue

other health care post-professional programs (for example, in physical therapy or physician assistant programs), or were unable to find jobs within the profession of AT, or if they decided not to pursue employment in AT.

Table 4

Distribution of Employment Settings

Employment Settings	Number of Respondents (%)
Clinic 14	(3.3%)
Clinic/Outreach 71(16.6%)	
College/University 200	(46.7%)
High School	125 (29.2%)
Hospital 5	(1.2%)
Industrial 4	(0.9%)
Physician Extender	4 (0.9%)
Professional Sports	4 (0.9%)
Not currently employed as an AT	47 (deleted)
Other 1	(0.2%)

n = 428

Hypothesis Testing: Perceived Adequacy of Clinical Education

The respondents' ratings of their clinical education perceived adequacy was transformed into standard percentages with Likert scores of "strongly agree" and "agree" to determine adequacy, and "disagree" and "strongly disagree" to determine inadequacy. The mean rating for questions on perceived adequacy were calculated. Scores of four greater indicated 'adequacy' and scores two or below indicated 'inadequacy.' This scoring was reversed for the negatively phrased perceived adequacy items, questions 5 and 11. These rating percentages were then compared to different independent variables. These calculations were made to answer research question one:

What are entry-level athletic trainers' perceptions of adequacy of clinical education preparation?

The relationship between perceived adequacy and confidence to practice AT was computed with a Pearson correlation, r = 0.736. Overall 87.1% of the respondents perceived their clinical education to be adequate, 96.7% felt confident to practice AT, and cumulatively by the A-CI, 97% felt their clinical education was adequate in preparing them for confident professional practice (see Table 5).

Table 5

Ratings for Clinical Education Perceived Adequacy, Confidence for Entry-Level AT Practice, and Adequacy Confidence Index

Adequate/C	onfident	Neutral	Inadequate/Not Confident
	Number of Respondents (%)		
Perceived Adequacy of Clinical Education	373 (87.1%)	17 (4%)	38 (8.9%)
Confidence to Practice Athletic Training	414 (96.7%)	4 (0.9%)	10 (2.3%)
Adequacy Confidence Index	415 (97%)	1 (0.2%)	12 (2.8%)

n = 428

Table 6 depicts the distribution of responses at all four levels of Likert indicators, rather than in collapsed categories, for survey items about clinical education perceived adequacy. The numbers in the table represent the number of respondents and how strongly they either agreed or disagreed with each survey statement. If the responses are related to a of level of adequacy each Likert score would translate to the following: strongly agree is very adequate, agree is adequate, disagree is inadequate, and strongly disagree is very inadequate. It is interesting to note that the majority of respondents stay

closer to neutral in their perceptions, rather than extreme, with 47.9% scoring 'adequate.' This is especially true in responses to Question 9, about administrative functions. Nonetheless, the cumulative difference between 'very adequate' and adequate' (e.g., 36.6% and 47.9% respectively) is not substantial enough to warrant additional analyses in search of significant differences as a function of aggregated or disaggregated levels of response. This finding does not discount that the respondents were satisfied with their clinical education preparation. Rather, it shows that there is still room for improvement within the clinical education component (see Table 6).

Table 6

Perceived Adequacy of Clinical Education by Survey Item

Question Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Number of Respondents (%)				
1	187 (43.7%)	206 (48.1%)	27 (6.3%)	7 (1.6%)	1 (0.2%)
3	175 (40.9%)	221 (51.6%)	13 (3%)	14 (3.3%)	4 (0.9%)
5	217 (50.7%)	170 (39.7%)	15 (3.5%)	17 (4%)	9 (2.1%)
7	136 (31.8%)	213 (49.8%)	49 (11.4%)	28 (6.5%)	0
9	66 (15.4%)	220 (51.4%)	95 (22.2%)	40 (9.3%)	6 (1.4%)
10	139 (32.5%)	226 (52.8%)	39 (9.1%)	20 (4.7%)	3 (0.7%)
11	174 (40.7%)	175 (40.9%)	39 (9.1%)	26 (6.1%)	13 (3%)
TOTAL	1094 (36.6%)	1431 (47.9%)	277 (9.3%)	152 (5.1%)	36 (1.2%)

In comparison to the professional practice domains, 82% or more respondents perceived their clinical education preparation as being adequate for the domains: prevention, clinical evaluation and diagnosis, immediate care, and treatment, rehabilitation and reconditioning. The domain with the most respondents to feel their clinical education preparation was inadequate was, 'organization and administrative

duties' with 46 (10%) of the respondents, which makes sense considering this is more of a didactically or job related learned skill set that comes with experience (see Table 7).

Table 7

Perceived Adequacy of Clinical Education by Professional Practice Domain

Professional Practice Domains	Ratings of Perceived Adequacy of Clinical Education		
	Adequate	Neutral	Inadequate
	Number of Respondents (%)		
Prevention	393 (89.7%)	27 (6.2%)	8 (1.8%)
Clinical Evaluation & Diagnosis	396 (90.4%)	13 (3%)	18 (4.1%)
Immediate Care	387 (88.4%)	15 (3.4%)	26 (5.9%)
Treatment, Rehabilitation, & Reconditioning	364 (83.1%)	35 (8%)	29 (6.6%)
Organization & Administration	286 (65.3%)	95 (21.7%)	46 (10.5%)
Professional Responsibility	349 (79.7%)	39 (8.9%)	39 (8.9%)

n = 428

The number of respondents who perceived their clinical education to be adequate in comparison to the college/university athletic division demonstrated little difference (see Table 8). In comparison to gender, 89% of males and 86.3% of the females perceived their clinical education to be adequate. Interestingly, the clinical education perceived adequacy rating in comparison to the number of times the subjects attempted the BOC exam dropped from 84.8% to 69.2% of the respondents between those who attempted the exam three versus four times (see Table 8). This result raises the question if predictors of BOC success are more related to didactic education.

Table 8

Perceived Adequacy of Clinical Education by Independent Variables

Independent Variable	Clinical Education Perceived Adequacy Rating		
	Adequate	Neutral	Inadequate
	Number of Respondents (%)		
NCAA Division I	184 (88.9%)	4 (1.9%)	19 (9.2%)
NCAA Division II	75 (85.2%)	6 (6.8%)	7 (8.0%)
NCAA Division III	98 (86%)	5 (4.4%)	11 (9.6%)
NAIA	13 (86.7%)	2 (13.3%)	0%
Males	121 (89%)	4 (2.9%)	11 (8.1%)
Females	252 (86.3%)	13 (4.5%)	27 (9.2%)
1 BOC Exam Attempt	264 (88.3%)	11 (3.7%)	24 (8%)
2 BOC Exam Attempts	66 (89.2%)	2 (2.7%)	6 (8.1%)
3 BOC Exam Attempts	28 (84.8%)	1 (3%)	4 (12.1%)
4 BOC Exam Attempts	9 (69.2%)	1 (7.7%)	3 (23.1%)
More than 4 BOC Exam Attempts	6 (66.7%)	2 (22.2%)	1 (11.1%)
Completed Clinical Internship			
YES	234 (87.6%)	9 (3.4%)	24 (9%)
NO	136 (86.1%)	8 (5.1%)	14 (8.9%)
Enrolled in Post-Professional NATA Accredited Athletic Training Program			
YES	68 (85%)	5 (6.3%)	7 (8.8%)
NO	305 (87.6%)	12 (3.4%)	31 (8.9)
Enrolled in Other Post-Professional Graduate Program			
YES	133 (91.1%)	6 (4.1%)	7 (4.8%)
NO	238 (85.3%)	10 (3.6%)	31 (11.1%)
Currently Employed as a Graduate Assistant Athletic Trainer			
YES	167 (89.8%)	9 (4.8%)	10 (5.4%)
NO	204 (85%)	8 (3.3%)	28 (11.7%)

n = 428

The national average pass rate on the BOC is low in comparison to other allied health care professions. In 2009, other professions' national certifying board exams demonstrated the following pass rates; nursing 75.9%, physical therapist 77%, and

physician assistants 86% (Federation of State Boards of Physical Therapy, National Commission on Certification of Physician Assistants, & National Council of State Boards of Nursing). In comparison, athletic trainers demonstrated a 43.3% pass rate on the BOC (BOC, 2011)

A study done in 2000 by Turocy, Comfort, Perrin, and Gieck examined predictive outcomes on the NATABOC exam. Conclusions demonstrated that neither the number of clinical experience hours nor specific sport assignments correlated to successful passing of the NATABOC exam (Turocy et. al). Additionally, Erickson and Martin (2000) investigated the entry-level ATP directors' perceptions on factors that lead to first time success on the BOC. The consensus gathered from the respondents showed that a student's ability to interpret the questions, their knowledge of therapeutic modalities and rehabilitative theories and techniques, clinical evaluation skills, active learning/participating in clinical experiences, and clinical instructors that provide a positive learning environment significantly contributed to the students ability to pass to the BOC on the initial attempt (Erickson & Martin).

Only 10 respondents who were currently employed as a graduate assistant AT felt their clinical education to be inadequate. In comparison, 28 respondents, more than double, who were not employed as a graduate assistant perceived their clinical education to be inadequate. Because of this large difference, speculation could be made that the ATs' current employment setting had an influence on their response. As a graduate assistant they might experience less autonomy and therefore have less room to feel inadequately prepared, or their preparation continued while being a graduate assistant

which contributed to their perception of adequacy.

In comparison to the subjects' current employment setting, perceptions of clinical adequacy ranged from 100% of ATs employed in the hospital setting to 50% of those working as a physician extender (see Table 9). ATs who worked in high schools were the highest job setting to perceive inadequacy, 15 (12%).

Table 9

Perceived Adequacy of Clinical Education by Current Employment Setting

Employment Setting	Perceived Adequacy Rating		
	Adequate	Neutral	Inadequate
	Number of Respondents (%)		
Clinic	10 (71.4%)	1 (7.1%)	3 (21.4%)
Clinic/Outreach	64 (90.1%)	2 (2.8%)	5 (7%)
College/University	181 (90.5%)	7 (3.5%)	12 (6%)
High School	104 (83.2%)	6 (4.8%)	15 (12%)
Hospital 5	(100%)	0	0
Industrial	3 (75%)	0	1 (25%)
Physician Extender	2 (50%)	1 (25%)	1 (25%)
Professional Sports	3 (75%)	0%	1 (25%)

n = 428

The environment of each AT job setting can vary greatly. ATs working at high schools are usually the sole health care provider at that site, working autonomously and sometimes lacking in various resources that make health care delivery easier. In contrast, ATs working at colleges/universities will typically have a network of colleagues also working in the athletic training facility, which can provide the benefits of peers and mentors. Additionally, college/university ATs will typically have greater resources to care for their patients, such as an on-site team physician, equipment, and resources. ATs

working as graduate assistants may experience continual learning by being enrolled in a post-professional athletic training program. In this situation, they would be exposed to faculty mentors, peers, other staff athletic trainers, and/or other health care providers that could help to foster development as a professional.

Typical clinical education sites are in intercollegiate athletics and high schools. For a new professional to enter the work force in a clinical setting in which they have had little or no prior experience could lead to perceptions of inadequacy due to familiarity of the clinical setting. Regardless of where clinical experiences occur, Laurent and Weidner (2002) express the critical importance of the quality of these experiences.

Perceived Confidence to Practice AT

Subjects' ratings of their confidence to practice AT was transformed into standard percentages with Likert scores of "strongly agree" and "agree" to determine confident, and "disagree" and "strongly disagree" to determine not confident. The mean rating for questions on confidence to practice AT were calculated. Scores of four or greater indicated 'confidence' and scores of two or below indicated 'not confident'. This scoring was reversed for the negatively phrased perceived confidence question number two. These rating percentages were then compared to the independent variables. These calculations were made to answer the second research question: After certification, how do entry-level athletic trainers rate their level of confidence to practice clinically?

Table 10 depicts all of the survey items that inquired about the respondents' confidence to practice AT. The numbers in the table represent the number of respondents and how strongly they either agreed or disagreed with each survey statement. If the

responses are related to a level of confidence each Likert score would translate to the following; strongly agree is very confident, agree is confident, disagree is not confident, and strongly disagree is very not confident. Similarly to the perceived adequacy score, more subjects did not stray to the extreme of feeling very confident. Rather 50.6% felt confident.

Table 10

Confidence to Practice AT by Survey Item

Question Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Number of Respondents (%)				
2	155 (36.2%)	143 (33.4%)	22 (5.1%)	50 (11.7%)	57 (13.3%)
4	141 (32.9%)	222 (51.9%)	48 (11.2%)	17 (4%)	0
6	83 (19.4%)	246 (57.5%)	80 (18.7%)	16 (3.7%)	2 (0.5%)
8	157 (36.7%)	220 (51.4%)	35 (8.2%)	13 (3%)	0
12	155 (36.2%)	245 (57.2%)	16 (3.7%)	9 (2.1%)	2 (0.5%)
13	146 (34.1%)	228 (53.3%)	37 (8.6%)	13 (3%)	1 (0.2%)
14	194 (45.3%)	198 (46.3%)	28 (6.5%)	5 (1.2%)	1 (0.2%)
15	151 (35.3%)	223 (52.1%)	42 (9.8%)	10 (2.3%)	1 (0.2%)
TOTALS	1182 (34.6%)	1725 (50.6%)	308 (9%)	133 (3.9%)	64 (1.9%)

In comparison to the professional practice domains and subjects' confidence to practice athletic training, Table 11 shows relatively high levels of confidence for each of the professional practice domains. As indicated, confidence was highest in the domain of clinical evaluation and diagnosis with 91.3% of respondents and somewhat lower in immediate care with 70.8% of respondents expressing confidence.

Table 11

Rating of Confidence to Practice AT by Professional Practice Domains

Professional Practice Domains	Rating of Confidence to Practice AT		
	Confident	Neutral	Not Confident
	Number of Respondents (%)		
Prevention	374 (85.4%)	37 (8.4%)	14 (3.2%)
Clinical Evaluation & Diagnosis	400 (91.3%)	16 (3.7%)	11 (2.5%)
Immediate Care	310 (70.8%)	74 (16.9%)	44 (10%)
Treatment, Rehabilitation, & Reconditioning	379 (86.5%)	33 (7.5%)	16 (3.7%)
Organization & Administration	329 (75.1%)	80 (18.3%)	18 (4.1%)
Professional Responsibility	392 (89.5%)	28 (6.4%)	6 (1.4%)

n = 428

Having 10% of the respondents not feeling confident in the domain of immediate care is slightly discouraging. If immediate care situations are emergent in nature, the AT must be able to manage the care of the patients safely, effectively, and confidently. Emergency situations are definitely frightening to handle, which may explain why 44 of the respondents felt not confident. Though 10% is a comparatively small percentage of respondents, this domain could be critical to a patient's life or future quality of life. Through clinical experiences, an athletic training student may encounter immediate care/emergent situations, but as an ATS, they were not the primary decision maker or the individual directly responsible for managing the situation. The researcher might speculate that with job experience the confidence level would increase over time.

Table 12 provides the percentage of respondents who felt confident to practice in comparison to the athletics division the college/university competes within. This comparison demonstrated little variance and high percentages of the respondents rated themselves as feeling confident to practice AT.

In disagreement with the review of literature, Hecimovich and Volet (2009) note studies showing improved confidence levels with students who completed a clinical internship or preceptorship. The data from this investigation showed very little variation exists between the number of respondents that felt confident to practice AT and whether or not they completed an internship. Of the respondents who completed a clinical internship 95.9% felt confident to practice AT; of those who did not complete a clinical internship 98.1% reported confidence to practice AT. Because of this little difference, the researcher is left wondering if clinical internships are really an effective tool for improving confidence in preparation for entry-level employment.

Employment setting did not appear to affect the confidence of ATs to practice in comparison to the respondents' current employment setting (see Table 13). In comparison to employment setting, only 10 respondents in total felt not confident to practice. This is positive to see the AT curricula are preparing students for employment within a variety of clinical settings.

Table 12

Confidence to Practice AT by Independent Variables

Independent Variable	Rating of Confidence to Practice AT		
	Confident	Neutral	Not Confident
	Number of Respondents (%)		
NCAA Division I	203 (98.1%)	1 (0.5%)	3 (1.4%)
NCAA Division II	83 (94.3%)	2 (2.3%)	3 (3.4%)
NCAA Division III	110 (96.5%)	1 (0.9%)	3 (2.6%)
NAIA 15	(100%)	0	0
Males	133 (97.8%)	2 (1.5%)	1 (0.7%)
Females	281 (96.2%)	2 (0.7%)	9 (3.1%)
1 BOC Exam Attempt	291 (97.3%)	2 (0.7%)	6 (2%)
2 BOC Exam Attempts	71 (95.9%)	1 (1.4%)	2 (2.7%)
3 BOC Exam Attempts	31 (93.9%)	0	2 (6.1%)
4 BOC Exam Attempts	12 (92.3%)	1 (7.7%)	0%
More than 4 BOC Exam Attempts	9 (100%)	0	0
Completed Clinical Internship			
YES	265 (95.9%)	4 (1.5%)	7 (2.6%)
NO	155 (98.1%)	0	3 (1/9%)
Enrolled in Post-Professional NATA Accredited Athletic Training Program			
YES	79 (98.8%)	0	1 (1.3%)
NO	335 (96.3)	4 (1.1%)	9 (2.6%)
Enrolled in Other Post-Professional Graduate Program			
YES	145 (99.3%)	0	9 (3.2%)
NO	266 (95.3%)	4 (1.4%)	9 (3.2%)
Currently Employed as a Graduate Assistant Athletic Trainer			
YES	185 (99.5%)	0	1 (0.5%)
NO	227 (94.6%)	4 (1.7%)	9 (3.8%)

n = 428

Table 13

Rating of Confidence to Practice AT by Current Employment Setting

Employment Setting	Rating of Confidence to Practice AT		
	Confident	Neutral	Not Confident
	Number of Respondents (%)		
Clinic	31 (92.9%)	0%	1 (7.1%)
Clinic/Outreach	69 (97.2%)	0%	2 (2.8)
College/University	197 (98.5%)	1 (0.5%)	2 (1%)
High School	119 (95.2%)	3 (2.4%)	3 (2.4%)
Hospital 5	(100%)	0	0
Industrial	3 (75%) 0 1		(25%)
Physician Extender	4 (100%)	0	0
Professional Sports	3 (75%)	0	1 (25%)

n = 428

Correlational Analysis

Bivariate correlations were used to assess the relationship between adequacy and confidence across the independent variables, which were collectively titled "professional preparation indicators" with a significance level set at $p < 0.05$. No significant correlations were observed between the professional preparation indicators and amount of perceived adequacy of clinical education, confidence to practice athletic training, or A-CI (see Table 14).

Table 14

Correlational Analysis of Professional Preparation Indicators and Perceived Adequacy of Clinical Education, Confidence to Practice AT, and Adequacy Confidence Index

Professional Preparation Indicators	Perceived Adequacy	Confidence to Practice AT	Adequacy Confidence Index
		r value	
Primary Athletics Division	-0.04	-0.08	-0.07
Cumulative GPA	0.01	-0.01	0.05
Employment Setting	-0.07	-0.08	-0.06
Clinical Internship	-0.01	0.05	0.05
Enrolled in MSAT	0.02	-0.05	-0.08
Enrolled in Other Post-Professional Program	-0.10	-0.10	-0.06
Graduate Assistant AT	-0.09	-0.13	-0.13

* $p < 0.05$

Additional Findings

Two participants responded to the researcher via email, with concerns pertaining to the survey questions addressing the professional practice domain of "diagnosis." These participants were under the impression that athletic trainers were not able to diagnose injuries.

These email concerns were given the following standard reply:

> Thank you for your response. As per the Role Delineation Study and the NATA's Professional Practice Domains of athletic training, athletic trainers CAN diagnose. Please see the link below to read more. You will notice "clinical evaluation and diagnosis" on the 2nd bullet.
>
> http://www.bocatc.org/index.php?option=com_content&view=article&id=31&Itemid=33

I hope this clears up any confusion. My survey was created by the domains of the profession that are established by our governing bodies. Also attached is some literature regarding AT's ability to diagnose injuries. Thanks for your time and participation.

Even though the research questions in this investigation were dichotomous in nature, the items on the survey were separated into perceived adequacy and confidence to practice AT categories. The data were re-analyzed to search for additional findings keeping the grouping categories each separate; strongly agree, agree, neutral, disagree, and strongly disagree. Responses tended not to deviate to the extreme of the Likert scale and instead centralized on the 'agree' option indicating confidence or adequacy. The majority of respondents, 47.9% perceived their clinical education to be 'adequate' and 50.6% felt confident to practice AT (see Table 6 & 10). In comparison, 36.6% of the respondents felt their clinical education to be 'very adequate' and 34.6% felt 'very confident' to practice AT.

If we further examine the respondents' perceptions as compared to the professional practice domains, the data could be grouped into two categories. Professional responsibility and organization and administration are more cognitively oriented abilities while prevention, clinical evaluation and diagnosis, immediate care, and treatment, rehabilitation, and reconditioning are more psychomotor related skills. When grouped accordingly, 90% of the respondents perceived their clinical education to be adequate in the psychomotor domain group as compared to 74.2% in the cognitive domain group. These findings are logical in that clinical education is intended to give

students the opportunity to apply their psychomotor skills while the cognitive domain concepts are learned through didactic education, job-site training, or professional experience. In response to the confidence of ATs to practice, the psychomotor domain group showed 85.5% of the respondents felt confident and 84.2% cognitive domain group. It is interesting that there was very little difference between the two domain groups when examining ATs' confidence to practice.

CHAPTER 5: CONCLUSION

Summary of the Study

The purpose of this investigation was to identify perceived adequacy of clinical education in preparation for confident entry-level AT practice. After reliability and validity testing, the survey was formatted into Survey Monkey and distributed through the NATA Membership Office. The sample consisted of 1,920 ATs who were within two years of graduating from their entry-level ATPs. The response rate of this study yielded a total of 428 respondents. The data analysis demonstrated that 87.1% of respondents perceived their clinical education to be adequate, 96.7% felt confident to practice AT, and cumulatively, 97% felt their clinical education was adequate in preparing them for confident AT practice. Additionally, no relationships exist among any of the professional preparation indicators and independent variables.

Conclusions

Positively, the findings showed that the only 38 (8.9%) of the respondents felt their clinical education was inadequate. Respondents felt the least adequately prepared in the professional practice domain of 'organization and administration.' Not surprisingly, the more BOC exam attempts required to pass, the less adequate the respondents perceived their clinical education and less confidently they perceived their clinical practice. Perceptions of clinical education adequacy may have been influence by respondents failing the exam multiple times. Little difference existed between the perceived adequacy and primary athletics division, ranging only from 88.9% to 85.2%. This might indicate that the caliber of the athletics association has less influence than the

researcher initially speculated. Little difference existed in the perceived confidence to practice AT in comparison to the athletics division, but the range increased slightly to 98.1% to 94.3%.

Over half of the respondents (52.80%) were currently pursuing a post-professional degree which speaks to the current trend in the AT profession that approximately 70% of currently practicing ATs hold a post-professional degree (NATA 2010). If graduates intend to remain within the AT profession, hopefully they would gain an advanced degree in AT to help broaden and deepen their knowledge and skill base and develop most appropriate professional behaviors. Data from this investigation showed, however, that fewer than one in five (18.7%) were currently enrolled in a NATA-accredited post-professional ATP. There are currently only 16 post-professional ATPs, while the number of other types of graduate programs across the country are too numerous to count (NATA, 2010). These findings raise the question: Is post-professional athletic training education the most contemporary approach to advanced AT preparation or should the profession look towards a shift to an entry-level master degree or post-professional AT residency programs?

The new trend within the profession is to transition the AT degree to entry-level master degree programs. A three plus two year curriculum design where the first component of the education is more general health science based and the latter is AT intensive. The idea with this transition is twofold; some educators believe that this change needs to happen to make AT more recognized as a competent and innovative health care profession. Others feel as though the attitudes of the millennial students are

lacking in maturity level and are not prepared to handle professional preparation at the true freshmen or sophomore age. Although no current AT literature exists on this topic in particular, the researcher gained this perspective by attending the Athletic Training Educators' Conference (ATEC) in February 2011 (Gardner, Koehneke, & Brown, 2011).

While pursuing a post-professional degree (either MSAT or other graduate degrees), 82% of the respondents were employed as graduate assistant ATs. The instrument did not gather what specific types of post-professional degrees the respondents were pursuing. Whether or not an athletic training graduate assistantship is available while pursuing a graduate degree is dependent on each specific university. ATs are marketable to work as graduate assistants, which provide an economical resource for universities while allowing entry-level practice in a fostering environment. The ATs are working in the real world, yet have faculty and experienced staff in close contact acting as mentors.

After communication with the NATA Membership Office two concerns were brought to the forefront: database management issues and ATs declining the option to participate in survey research or not being members of the NATA. During the 2008-2009 and 2009-2010 BOC exam period there were a total of 2,853 and 2,769 first time test candidates totaling a potential sample of over 5,600 subjects (BOC, 2010). The NATA Membership Office was only able to gather 1,920 potential subjects' email addresses, which is less than a third of the estimated potential subject pool. Issues may lie in the management of this contact database. For only a third of entry-level AT professionals to be members of the NATA seems unbelievable. It is discouraging if two-thirds of the

potential subjects opt out of survey research participation, as participation is a positive contributing process to volunteer. Unfortunately, due either to not being NATA members or declining the option to be contacted for survey research participation the sample for this study was much smaller than expected.

A new content area, Evidence-Base Practice (EBP), identifies that clinicians are using the most current evidence in making patient care decisions. By using the best practice, we hope to improve patient outcomes. It is critical in our education, both didactically and clinically, that all educators are using EBP. This educational revision as a very positive step forward within the profession and educational system.

Recommendations for Athletic Training Clinical Education

All entry-level ATPs are accredited by CAATE. The accrediting standards set forth must be addressing the desired benchmark mission since the overwhelming majority of entry-level AT professionals in this investigation felt satisfied with their clinical education preparation. In a study done by Massie (2003), 99.4% of the respondents perceived their clinical education to be adequate in preparing them for employment. The accreditation process appears to be functioning well in this area. Massie (2009) also found that employers of recent AT graduates found their employees to be clinically and academically prepared for professional practice. These employers perceived that the areas where ATs were unprepared were skills that could be learned while in the workplace. A primary concern for the employers was a lack of interpersonal skills of the ATs (Massie). Massie concludes that employer perceptions appear to be consistent with findings in the larger field of medical education.

Clinical instructors play a critical dual role of not only being practitioners, but educators to ATSs. From the results of this investigation, it appears that new graduates are generally satisfied with their clinical education. We are left wondering why or what are the contributing factors that lead to successful clinical education?

A key component in clinical education is having positive learning experiences that are fostered through the clinical instructor (Lauber, 2009). It has been found that ATSs perceive the behaviors of clinical instructors have a major impact on their development as a professional (Curtis, Helion, & Domsohn, 1998). Currently, each ATP is responsible for conducting clinical instructor training seminars by the program's clinical instructor educator (CIE) (CAATE, 2008). The training sessions' content areas are universal as mandated by CAATE. It would be interesting to see if ATPs are having additional semi-regular meetings with their clinical instructors. Organized clinical meetings would allow clinical instructors a chance to exchange ideas collectively and problem solve when issues arise. CAATE could also make an additional accreditation standard regarding ACIs; clinical instructor continuing education (CE). Similarly, like other health care professions, ATs are required to report CE to maintain national certification and state licensure. Revising this mandate to require that a given number of CEUs are directly related to clinical supervision must be completed on a biannual basis. It has been seen in other allied health care professions, that clinical instructor training seminars can have positive results in helping to develop the instructors' teaching and skills assessment abilities (Levy, et. al 2009). These seminars also give clinical

instructors a medium to collectively address problems and concerns that they have experienced while providing clinical supervision (Levy, et al).

Clinical education should be the opportunity where ATSs are taking the classroom knowledge and actually applying it. These experiences strengthen a true understanding of the information. Clinical experiences require a tremendous amount of time in addition to full academic course loads. AT educators should identify if this extensive time is being used most effectively. Increasing the amount of clinical experience hours does not correlate to an increase in the quality of learning (Berry, Miller, & Berry, 2004). AT educators should strive to change the focus of clinical education to increase the amount of engagement and active learning time. The author recommends a transition away from quantity to focus more on quality of clinical education and work to improve students' interpersonal communication skills.

In December 2010, the 5th edition of the AT Educational Competencies was published. The document underwent major improvements, renovations, and revisions since its last print in 2006. The 12 content areas have been reorganized and condensed into eight. The changes also reflect a more contemporary clinical practice. From here forward AT education will change to align with this update within the education field (NATA, 2010).

Recommendations for Further Research

Much additional research in the field of athletic training education needs to be done. In comparison to other allied health care professions, the extent of athletic training education literature is lacking. The current CAATE standards have only been in place

since 2008 and effective academic year 2011-12 are about to undergo another transition. New research will need to be done once students have gone through the education process under these new set of guidelines.

Using the new edition of the educational competencies, the survey instrument should be revised to align with the new content areas. Instrument format could also be revised to utilize a dichotomous Likert scale instead of the five-point scale that was used in this investigation to more accurately represent the true perceptions of the respondents.

There has not been recent research looking at the current version of the BOC exam compared to success rate and number of clinical experience hours, clinical placement settings, and other professional preparation indicators. In 2001, Middlemas, Manning, Gazzillo, and Young looked at predictors of success on the NATABOC and a prior study, in 2000 looked at program directors' perceptions of contributors to successful completion of the NATABOC (Erickson & Martin). Since these investigations, the national certifying exam has changed formats significantly; eliminating the practical exam component, addition of electronic written simulation questions, 5-item focused scenarios, and transitioning to be totally electronic (BOC, 2010). With these testing revisions, additional research needs to be done around the new benchmarking instrument to professional practice.

Additional research could be done pertaining to the attitudes of clinical instructors regarding their roles as educators to ATSs and to focus specifically on time spent at clinical experiences versus the perceived adequacy. As evident by previous research, the role of a clinical instructor is pivotal (Henning & Weidner, 2008). Due to this significant

importance, it is critical to understand from the instructors' perspectives how they feel about educating students clinically and their philosophy on this unique educational opportunity.

Finally, further AT research needs to investigate the notion of active/engaged time versus total time ATSs spend at clinical experiences. Since the dismissal of the clock hour minimum mandate, the sometimes extensive amount of time ATSs put into their clinical education has not been a focus of research attention. The concepts of how clinical experience time is being spent and how much time is actually supporting clinical learning would be the driving research questions.

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APPENDIX A: SURVEY OF ENTRY-LEVEL ATHLETIC TRAINING PROFESSIONALS

Survey of Entry-Level Athletic Training Professionals

The purpose of this investigation is to survey entry-level employed athletic trainers to gain an understanding of your perceptions of your clinical education in preparation for employment. This investigation has been approved by Ohio University's Institutional Review Board (IRB) and has no foreseeable risks or benefits in participating.

Part I: Demographics and Additional Information

Directions: Please respond to each of the following questions.

1. Sex
   Male Female

2. What was the primary NCAA Division of your institution where you completed your entry-level Athletic Training Program?
   I II III Other:_____

3. What was your overall GPA (at the time of graduation from your entry-level athletic training program)?

4.0, 3.9, 3.8, 3.7, 3.6, 3.5, 3.4, 3.2, 3.1, 3.0, 2.9, 2.8, 2.7, 2.6, 2.5, 2.4, 2.3, 2.2, 2.1, below 2.1

4. How many times did you take the Board of Certification Exam (BOC)?
   1 2 3 4 More than 4

5. Did you complete a clinical internship as a part of your entry-level Athletic Training Program's curriculum?
   YES NO

   If yes, in which setting did you complete your internship?

   _____

6. Are you currently enrolled in a post-professional NATA-accredited athletic training program?
   YES NO

7. Are you currently enrolled in another type of post-professional graduate program?

YES NO

8. Are you currently employed as a graduate assistant athletic trainer?
   YES NO

9. In what clinical setting do you currently practice athletic training? If you are employed through an athletic training graduate assistantship, what setting do you practice athletic training?
   - o Clinic
   - o Clinic/outreach
   - o College/university
   - o High school
   - o Hospital
   - o Industrial
   - o Physician Extender
   - o Professional sports
   - o I am not currently employed as an athletic trainer
   - o Other (please specify):_____

10. In your experience as an athletic training student, what was the approximate distribution of the number of faculty/staff positions within your Athletic Training Program?

Staff Athletic Trainers (only practiced clinically) 1, 2, 3… 10, more than 10

Academic Faculty (only instructed courses) 1, 2, 3… 10, more than 10

Dual Appointment Faculty (both taught courses and practiced clinically)1, 2, 3…10, more than 10

11. Please select those clinical experiences that you were engaged in once enrolled in your entry-level athletic training program.
    Of the clinical sites that you completed your clinical education, please indicate the total number (including yourself) of Athletic Training Students assigned to that site.

Clinical Education Site	**Total Number of Athletic Training Student at the Site**
Baseball _____	
Basketball (Men's)	_____

Basketball (Women's)	_____
Club Sports	_____
Cross Country	_____
Field Hockey	_____
Football _____	
Gymnastics _____	
High School	_____
Ice Hockey (Men's)	_____
Ice Hockey (Women's)	_____
Lacrosse (Men's)	_____
Lacrosse (Women's)	_____
Physical Therapy Clinic	_____
Tennis	_____
Track and Field	_____
Soccer (Men's)	_____
Soccer (Women's)	_____
Softball	_____
Swimming/Diving	_____
Volleyball	_____
Wrestling	_____
Other (please specify):_____	_____

Part II: Clinical Education Perceptions

Directions: For each of the following statements, please mark how strongly you agree or disagree. Please focus solely on your entry-level athletic training program' clinical education when considering your responses.

1. My clinical education was adequate in preparing me to prevent injuries.
   Strongly Agree Agree Neutral Disagree Strongly Disagree

2. I am not confident in my abilities to provide emergency care in my role as an athletic trainer.
Strongly Agree Agree Neutral Disagree Strongly Disagree

3. My clinical education adequately prepared me to diagnose injuries.
Strongly Agree Agree Neutral Disagree Strongly Disagree

4. I am confident in my abilities to design treatment, rehabilitation, and reconditioning programs.
Strongly Agree Agree Neutral Disagree Strongly Disagree

5. My clinical education was not adequate in preparing me to provide immediate care to injured patients.
Strongly Agree Agree Neutral Disagree Strongly Disagree

6. I am confident in my abilities to complete athletic training administrative tasks.
Strongly Agree Agree Neutral Disagree Strongly Disagree

7. My clinical education was adequate in preparing me to design treatment, rehabilitation, and reconditioning programs.
Strongly Agree Agree Neutral Disagree Strongly Disagree

8. I am confident in making immediate patient care decisions on my own.
Strongly Agree Agree Neutral Disagree Strongly Disagree

9. My clinical education was adequate in preparing me to complete the administrative functions of an athletic trainer.
Strongly Agree Agree Neutral Disagree Strongly Disagree

10. My clinical education was adequate in preparing me to implement treatment, rehabilitation, and reconditioning programs.
Strongly Agree Agree Neutral Disagree Strongly Disagree

11. My clinical education was not adequate in preparing me for professional development.

Strongly Agree Agree Neutral Disagree Strongly Disagree

12. I am confident in my abilities to diagnose injuries.

Strongly Agree Agree Neutral Disagree Strongly Disagree

13. I am confident in my abilities to implement injury prevention techniques.

Strongly Agree Agree Neutral Disagree Strongly Disagree

14. I am confident that I can perform the professional development required of an athletic trainer.

Strongly Agree Agree Neutral Disagree Strongly Disagree

15. I am confident in my abilities to implement treatment, rehabilitation, and reconditioning programs.

Strongly Agree Agree Neutral Disagree Strongly Disagree

16. Overall, how would you rate the adequacy of your entire clinical education experience in preparing you for confident entry-level employment?

5 4 3 2 1

Exceptional Better than Adequate Marginally Not Adequate

Adequate Adequate

APPENDIX B: EXPERT PANEL VALIDITY TESTING MEMO

To: Dr. _____
Date: 4/20/10
Re: Expert Panel Validity Testing

I am seeking your assistance as part of an expert panel for validating the survey instrument I have created and intend to utilize for my dissertation research. Specific information about how you can assist as a member of the expert panel is on page 3 of this memo.

The purpose of my dissertation research is to gain an understating of entry-level athletic trainers' perceptions of their clinical education in preparation for confident professional practice. I intend to survey new practicing athletic trainers that are within twenty-four months of graduating from their entry-level athletic training programs. The survey will ask the subjects to reflect back on their clinical education as well as gain information about their professional preparation.

In developing the instrument, I based the concept on a study conducted in 1992 by Dr. Thomas Weidner and Dr. William Vincent. Unlike this earlier study, I will focus solely on clinical education utilizing the six professional practice domains of athletic training as categories (cf., 5th edition of the BOC Role Delineation Study). Following a suggestion from Weidner and Vincent's previously conducted investigation, I will also gather data on several professional preparation ideas pertain to size of the athletic training program and division of the roles of the program's faculty and clinical staff etc. The table below shows distribution of the survey questions (by item number) across the six domains.

Table 1. Alignment of survey questions by professional domain and dependent variable		
Professional Practice Domains of Athletic Training	Confidence to Practice Athletic Training	Perceived Adequacy of Clinical Education
Prevention	#13 #1	
Clinical Evaluation and Diagnosis	#11 #3	
Immediate Care	#2, #8	#5, #12
Treatment, Rehabilitation, and Reconditioning	#4 #7	
Organization and Administration	#6 #9	
Professional Responsibility	#14 #10	

To preview a copy of the instrument on survey monkey please click on the following link. I have attached a word document containing the instrument in case errors arise opening the survey monkey link.

http://www.surveymonkey.com/s.aspx?PREVIEW_MODE=DO_NOT_USE_THIS_LINK_FOR_COLLECTION&sm=BC1RdnR2syRvTB8VCtXITDO04CfLWnd4FYunYuNveFs%3d

Questions for Members of the Expert Panel

As a member of the expert panel, please respond to the following question (the numbers correspond to two content areas of either perceived adequacy or confidence to practice):

Do the survey items for each professional practice domain (as listed in Table 1) adequately represent that domain?

Professional Practice Domains of Athletic Training	Survey Item Numbers		YES	NO	Comments and Explanations
	Perceived Adequacy	Confidence to Practice			
Prevention	#1				
	#13				
Clinical Evaluation and Diagnosis	#3				
	#11				
Immediate Care		#2 & 8			
	#5 & 12				
Treatment, Rehabilitation, and Reconditioning	#4				
	#7 & 10				
Organization and Administration	#6				
	#9				
Professional Responsibility	#10				
		#14			

Please see attached survey instrument or survey monkey link. If you have any advice or other concerns about the instrument I would greatly appreciate your feedback.

Again your knowledge would be an asset to me in validating this survey instrument. I greatly appreciate your time and efforts in assisting my on this educational journey! If you could

provide your feedback by April 28nd, it would be much appreciated, as I would like to pilot this investigation as soon as possible to also test its reliability.

You can send your replies via email attachments to ks404707@ohio.edu. If you have anything that you would like to discuss over the phone, I can be contacted at 814-233-9197.

Thank you in advance for your time and sharing your perspective.

Sincerely,

Kayla Shinew, MS, AT

Ohio University

Athletic Training Program

Grover Center E167

Ks404707@ohio.edu

814-233-9197

APPENDIX C: APPLICATION FOR NATA MEMBERSHIP DATABASE ACCESS

GUIDELINES

Student Member Surveys

The NATA Board of Directors has implemented the following policy:

> When a student asks the national office for a survey email list, the student is referred to the appropriate district secretary. If the survey meets the District Secretaries & Treasurers Committee requirements, the student is approved to receive survey broadcast service.

Disclaimer: The NATA Board was concerned the recipients may think the surveys are NATA-sponsored. As a result, NATA requires students to use a disclaimer at the beginning of the questionnaire, as follows.

> "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."

Process: NATA will broadcast student surveys to a maximum of 1,000 email addresses. A cover letter containing a link to the member's questionnaire will be transmitted to recipients via email. The email will be configured to show the researcher as the sender. If a follow-up reminder is desired, NATA will transmit a second letter to the same members selected for the original broadcast.

NATA Certified Member Surveys

Certified members requesting lists for research purposes will be referred to their district secretary for project approval.

Process: Once approved, NATA will provide the email list to the Certified Member at the lowest rate of (9 cents/address). The Certified Member is responsible for constructing their e-blast and follow up through a bulk e-mail provider of their choice. Prepayment and a signed one-time use agreement are required. There is no limit to the number of contact names a certified member can request for a project.

Non-NATA Member Surveys

Non-members requesting lists for research purposes will be referred to the district secretary of their state for project approval.

Process: Once approved, NATA will send out the email broadcast at the rate of $200.00 plus (13 cents/address). Prepayment and a signed one-time use agreement are required. There is no limit to the number of contact names a non-member can request for a project. NATA does not offer an email broadcast service for certified members.

Revised 02/03/2010

Survey List Request Form

Request Date: _____ Date Needed: _____

Check one
Member #: 998441_____ (Required) X Full Time
Part Time
Not a Student

Name: Kayla Shinew_____

Mailing Address: _4312 Pleasant Hill Rd_____

City/State/Zip: Athens, OH 45701_____

Phone: 814-233-9197_____

Fax: _740-593-0284_____

E-Mail Address: __shinew@ohio.edu_____

Title of Study: __ Entry-Level Athletic Trainers' Perceived Adequacy of Clinical Education in Preparation for Confident Professional Practice_____

Purpose Statement: To investigate the perceived adequacy of clinical education from the perspective of entry-level practicing athletic trainers._____

Institution where Research is Being Conducted: _Ohio University_____

Advisor's Signature (if applicable): _____ Date: _____

Funding Source of Study: Ohio University College of Education Grant_____

**** Please include a copy of your survey instrument, informed consent form, and documentation of approval from your Institutional Review Board (IRB).**

**** Student Members: If requesting email broadcast service from the National Office for your survey, you MUST provide the letter of announcement (in MS Word format)**
that you plan on using in the broadcast as well as your current email address.

Send this form to your District Secretary for processing. Please allow three to four weeks for delivery.

Survey List Request Form

Purpose of Mailing List (check all that apply):

- Email Survey

-Email broadcast service by National Office (max. 1000 recipients available to student members only)

- Is follow up Email Survey required?
- Survey (for non students)
  - email addresses
  - postal addresses

File format:

- Comma Delimited Text
- Excel

Work Settings:

- College/University
- Secondary School
- Clinic
- Hospital
- Professional Sports
- Industrial/Occupational/Corporate
- Business/Sales/Marketing
- Health/Fitness/Sports Clubs/
- Performance Enhancement Clinics
- Amateur/Recreational/Youth Sports
- Military/Law Enforcement/Government
- Independent Contractor
- Other
- Unemployed

- All Member Types
- Certified
- Associate
- Retired Certified
- Certified Students
- Non-certified Students
- International Non-Certified
- Certified International

To select by geographical area, please select one:

- US only
- All Districts
- All members (Canada & International included)

To make a selection by State or District, check/circle below:

Districts States

- 1 CT, ME, MA, NH, RI, VT
- 2 DE, NJ, NY, PA
- 3 DC, MD, NC, SC, VA, WV
- 4 IL, IN, MI, MN, OH, WI
- 5 IA, KS, MO, NE, ND, OK, SD
- 6 AR, TX
- 7 AZ, CO, NM, UT, WY
- 8 CA, NV, HI, Guam
- 9 AL, FL, GA, KY, LA, MS, TN
- 10 AK, ID, MT, OR, WA

SURVEY LIST USE AGREEMENT

I certify that the requested NATA survey list will be utilized only for the study specified above. The list will not be duplicated, copied, or reproduced in any manner, but used one time only.

I agree that any broadcast email will not contain other recipients' email addresses in the "To:" or "Cc:" field, since the email addresses provided are not to be shared among the recipients.

To send a broadcast email from Microsoft Word, we have provided instructions in the members-only section of the NATA Website. Go to: https://www.nata.org/members1/documents/mass_email_instructions_for_nata.pdf.

Members agree to abide by policies and procedures of the NATA. Failure to abide by these requirements is a violation of such policies and may subject the user to sanctions by the NATA Ethics Committee.

Applicant Signature_____ Date _____

Approved by (District Secretary)_____ Date _____

SAMPLE Contact Cover Letter for student surveys

Dear Fellow Certified Athletic Trainer:

I am a master's degree candidate at (**University Name**), requesting your help to complete part of my degree requirements. Please follow the link at the end of this letter to an online survey titled: (**Title of Project**).

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.

The questionnaire consists of __ demographic questions and __ Likert Scale (1-very uncomfortable to 5 very comfortable) questions, which will take about five to seven minutes to complete.

One thousand randomly selected certified NATA members in (**Location Demographic**) with a listed email address are being asked to submit this questionnaire, but you have the right to choose not to participate. The (**University Name**) Institutional Review Board has approved this study for the
Protection of Human Subjects.

This is a completely anonymous questionnaire and upon submission, neither your name nor email address will be attached to your answers. Your information will be kept strictly confidential.

As a fellow certified athletic trainer, your knowledge and opinions regarding this topic makes your input invaluable. Please take a few minutes to fill out the anonymous questionnaire you will find by clicking on this link and submit it by (Date):
(**http://web page link/**)

Thank you for your time and consideration.

Sincerely,

Name of Member and Credentials
Institution Name
Address
Email Address

Participants for this survey were selected at random from the NATA membership database according to the
selection criteria provided by the student doing the survey. 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.

APPENDIX D: INSTITUTIONAL REVIEW BOARD (IRB) PROJECT OUTLINE FORM

OHIO UNIVERSITY
INSTITUTIONAL REVIEW BOARD (IRB)
PROJECT OUTLINE FORM

Title of Research Proposal
The perceptions of entry-level athletic trainers adequacy of clinical education in preparation for confident professional practice

Investigator(s) Information
Primary Investigator

Name Kayla Shinew Department RSAT

Address 4321 Pleasant Hill Rd Athens, OH 45701
(If off-campus, include city, state and zip code)

Email ks404707@ohio.edu Phone 814-233-9197
Training Module Completed? X Yes ☐ No

Co-investigators
Name Departm ent
Address
(If off-campus, include city, state and zip code)
Email Phone
Training Module Completed? Yes ☐ No

Advisor Information (if applicable)
Name Dr. Ginger Weade Department Teacher Education
Address McCracken Hall 202 Athens, OH 45701 Phone 740-597-1480
(If off-campus, include city, state and zip code)
Email weade@ohio.edu
Training Module Completed? X Yes ☐ No

Anticipated Starting Date Upon IRB approval Duration mos 1 yr
(Work, including recruitment, cannot begin prior to IRB approval. This date should never precede the submission date)

Funding Status

Is the researcher receiving or applying for external funding? X Yes No
If yes, list source I'm working on applying for the College of Education Dissertation Grant to fund buying additional contacts to increase my subject pool

If yes, describe any consulting or other relationships with this sponsor.
I am a doctoral candidate within the College of Education.

Is there a payment of any kind connected with enrollment of participants on this study that will be paid to persons other than the research participants? ☐ Yes X No
(If yes, describe.)

Review Level

Based on the definition in the guidelines, do you believe your research qualifies for:
X Exempt Review Category 2
Expedited Review Category
Full Committee Review

Recruitment/Selection of Subjects
Maximum Number of Human Participants 5,000
Characteristics of subjects (check as many boxes as appropriate).
___Minors ___Physically or Mentally Disabled ___Elementary School Students
_X Adults ___Legal Incompetency ___Secondary School Students
___Prisoners ___Pregnant Females ___University Students
___Others (Specify)_____

Briefly describe the criteria for selection of subjects (inclusion/exclusion). Include such information as age range, health status, etc. Attach additional pages if necessary.

The following is the criteria for subject selection:
Inclusion criteria:
Graduates of an entry-level Athletic Training Program.
Certified by the Board of Certification (BOC)
Within 24 months of graduating from their entry-level Athletic Training Program
Member of the National Athletic Trainers' Association (NATA).
Employed/practicing within the profession of athletic training
Student certified, meaning individuals are certified to practice athletic training, but pursuing a post-professional degree will not be excluded from the study as long as they are currently employed in the field of athletic training, graduate assistantships included.
Working email addresses

Exclusion Criteria
Individuals that have left the profession of athletic training (are currently unemployed or are working within a different profession).
Individuals who have graduated from an entry-level Athletic Training Program, but have not yet pass the BOC.
Graduated over 24 months ago from their entry-level Athletic Training Program.
Not yet passed the BOC

How will you identify and recruit prospective participants? If subjects are chosen from records, indicate who gave approval for the use of the records. If records are "private" medical or student records, provide the protocol, consent forms, letters, etc., for securing consent of the subjects for the records. Written documentation for cooperation/permission from the holder or custodian of the records should be attached. (Initial contact of subjects identified through a records search must be made by the official holder of the record, i.e. primary physician, therapist, public school official.)

Prospective participants will consist of Certified Athletic Trainers (ATC) from across the United States who are members of the National Athletic Trainers' Association (NATA). Subjects will be recruited from the NATA membership office using the NATA membership database. NATA membership office officials can apply the necessary inclusionary criteria to the database to select the population. Only NATA members that have given permission to the NATA to be contacted for survey research will be available for use.

Please describe your relationship to the potential participants, i.e. instructor of class, co-worker, etc. If no relationship, state no relationship.

No known relationship

Attach copies of all recruitment tools (advertisements, posters, etc.) and label as APPENDIX B

Performance Sites
List all collaborating and performance sites, and provide copy of IRB approval from that site and/or letters of cooperation or support.

N/A - Web-based survey

Project Description

Please provide a brief summary of this project, using non-technical terms that would be understood by a non-scientific reader. Please limit this description to no more than one typewritten page, and provide details in the methodology section.

The purpose of this investigation is to survey entry-level employed athletic trainers to gain an understanding of their perceived level of satisfaction regarding their clinical education in preparing them for employment and their confidence in their abilities to autonomously practice athletic training in a real world setting. The professional domains of athletic training as derived from the Board of Certification (BOC) Role Delineation Study are; prevention of athletic injuries, immediate care, clinical evaluation and diagnosis, treatment, rehabilitation and reconditioning, professional practice, and organization/administration (BOC, 2004). Educational preparation to become an athletic trainer is rigorous and consists of two options; a four year baccalaureate degree or an entry-level master's degree program, both comprised of a combination of coursework and clinical education requirements. The clinical education portion allows for the practical application of knowledge gained through didactic class work, to real life situations and patients. Having the opportunity to work within a clinical setting also allows ATSs to experience the concept of patient care and professional responsibilities of athletic training. Clinical education is a critical component of an athletic training student's education. This should be a time where clinical educators are helping to develop athletic training students into competent practitioners. The intent of this investigation is to gather the perceptions of athletic trainers practicing within the profession to see if they feel this to be the case. There is a warranted need for this investigation to seek answers if improvements need to be made within athletic training program's clinical education curriculum.

Please describe the specific scientific objectives (aims) of this research and any previous relevant research.

Two aims of this investigation are to: 1. Gain an understanding of the effectiveness and adequacy of clinical education in

preparing athletic training students for professional employment.
2. Identify correlations between professional preparation indicators (GPA, number of attempts to pass the BOC) and context questions (NCAA division intercollegiate athletics program, number of athletic training students in graduating class, clinical education assignments, current job, gender, clinical internship completion) to entry-level athletic training practitioner's perceived level of adequacy of clinical education and confidence for professional practice.

Methodology: please describe the procedures (sequentially) that will be performed/followed with human participants.

The researcher will use Survey Monkey (Portland, OR) to survey participants. The participants email addresses will be obtained through the NATA membership database. Participants will be contacted via email address listed in the membership registry. NATA members have the option to opt out of being contacted to participate in research surveys when becoming members of the NATA. An email will be sent to participants encouraging them to participate in the research survey, explaining the purpose of the investigation, the consent to participate procedure, and thanking them for their time and participation. A web link to the electronic survey that will be administered on Survey Monkey will be included in the email. By clicking on the web link within the email, participants will be asked to consent to participate and proceed to the questionnaire. The survey will consist of a series of four point Likert scaled questions, perceived adequacy of clinical education and confidence to practice athletic training. Information will also be gathered such as academic indicators ie. GPA, number of attempts to pass the BOC and context questions ie. NCAA division of intercollegiate athletics program, number of athletic training students in graduating class, clinical education assignments, current job, gender, clinical internship completion. Participants will have ten days to complete the survey. An additional email will be sent ten days after the original email to encourage those that have not yet responded to participate. This second attempt email will contain all the material of the original email. The participants will then have another ten days to complete the survey. When the last ten days have passed the data collection period will be complete and data analysis will begin.

Describe any potential risks or discomforts of participation and the steps that will be taken to minimize them.

There are no potential risks or discomforts.

Describe the anticipated benefits to the individual participants. If none, state that. (Note that compensation is not a benefit, but should be listed in the compensation section on the next page.)

None

Describe the anticipated benefits to society and/or the scientific community in lay language. There must be some benefit to justify the use of human subjects.

The benefit of this research will help the profession of athletic training.

Please discuss the confidentiality level for the data collected. For example, indicate whether records will be labeled with the subject's name, or whether they will be labeled with a code number. If code number used, provide detail about the key that links name and code number (where stored/when destroyed, etc.).

All subject's information will remain confidential throughout the study and will not be shared with anyone else other than the investigators of the study.

With whom will *identifiable* data be shared outside the immediate research team? For each, explain confidentiality measures.

No one

Will participants be: Audiotaped? ☐ Yes X No

Videotaped? ☐ Yes X No

If so, describe how/where the tapes will be stored (i.e. locked file cabinet in investigator office), who will have access to them, and an estimate of the date they will be destroyed.

Will participants receive any compensation (money, course credit, gifts)?

Participants will not receive compensation.

If so, please detail amount/session and total compensation possible. Additionally, describe what compensation amount is paid to participants who discontinue participation prior to completion.*

Instruments

List all questionnaires, instruments, standardized tests below, with a brief description, and provide copies of each, labeled as APPENDIX C.

All participants will complete a survey created by the investigators on Survey Monkey, see Appendix C.

How will the data be analyzed? If applicable, state the hypothesis and describe how the analysis of the data will test that hypothesis.

Results will be analyzed using the Statistical Package for Social Science (SPSS) version 16.0.
Descriptive statistics will be used to analyze the first two research questions.
What are the perceptions of adequacy of clinical education preparation for entry-level athletic trainers?
How do entry-level athletic trainers rate their level of confidence to clinically practice after certification?
T-tests, multiple regressions, ANOVA, and correlations will be used to analyze the third research questions.
What is the relationship between professional preparation indicators and entry-level athletic trainers' perception of adequacy of their clinical education or confidence to practice.

Informed Consent Process

Are you requesting a waiver or alteration of Informed Consent? X Yes ☐ No
(If yes, check one, and answer a - e)

X Waiver of signature

☐ Deception (incomplete disclosure)

☐ Complete Waiver of consent

Provide justification for the waiver.

Describe how the proposed research presents no more than minimal risk to participants.

The participants will fill out a web-based survey, as a result they are not able to offer their personal signature for consent purposes. The following text will be provided at the introduction of the survey to inform participants about their agreement of the consent process. The following statement will be included:

"Your participation in this research is completely voluntary and you are free to withdraw at any time without penalty. Be assured that any information you provide will be held in strict confidence by the researcher, and at no time will your name be attached to your response. By clicking the link and completing the survey you indicate that you have been informed, understand the nature and purpose of this study, and therefore consent to be a subject."

Why will a waiver of informed consent not adversely affect the rights and welfare of participants?

N/A

Why is it impracticable to carry out the research without a waiver or alteration of informed consent?

N/A

How will pertinent information be provided to participants, if appropriate, at a later date?

N/A

Even if waiver of written informed consent is granted, you will likely be required to obtain verbal permission that reflects the elements of informed consent (if appropriate). Please specify below information to be read/given to participants.

N/A

Attach copies of all consent documents or text and label as APPENDIX A. Please use the template provided at the end of this document.

Informed consent is a process, not just a form. Potential participants/representatives must be given the information they need to make an informed decision to participate in this research. How will you provide information/obtain permission?

How and where will the consent process occur? How will it be structured to enhance independent and thoughtful decision-making? What steps will be taken to avoid coercion or undue influence?

Participants will be informed with the following message for consent purposes before they begin the survey. "Your participation in this research is voluntary and you are free to withdraw at any time without penalty. Be assured that any information you provide will be held in strict confidence by the researcher, and at no time will your name be reported along with your response. By clicking the link and completing the survey you indicate that you have been informed or, and understand the nature and purpose of this study, and therefore freely consent to be a participant."

Will the investigator(s) be obtaining all of the informed consents? X Yes ☐ No
If not, identify by name and training who will be describing the research to subjects/representatives and inviting their participation?

Will all adult participants have the capacity to give informed consent? If not, explain procedures to be followed.

Yes

If any participants will be minors, include procedures/form for parental consent and for the assent from the minor.

Minors will not be included in this study.

Will participants be deceived or incompletely informed regarding any aspect of the study? ☐ Yes X No

If yes, provide rationale for use of deception.

If yes, attach copies of post-study debriefing information and label as APPENDIX D. Additionally, complete the questions related to a consent form waiver or alteration on page 9.

Investigator Assurance

I certify that the information provided in this outline form is complete and correct.

I understand that as Principal Investigator, I have ultimate responsibility for the protection of the rights and welfare of human subjects, conduct of the study and the ethical performance of the project.

I agree to comply with Ohio University policies on research and investigation involving human subjects (O.U. Policy # 19.052), as well as with all applicable federal, state and local laws regarding the protection of human subjects in research, including, but not limited to the following:

The project will be performed by qualified personnel, according to the OU approved protocol.
No changes will be made in the protocol or consent form until approved by the OU IRB.
Legally effective informed consent will be obtained from human subjects if applicable, and documentation of informed consent will be retained, in a secure environment, for three years after termination of the project.
Adverse events will be reported to the OU IRB promptly, and no later than within 5 working days of the occurrence.
All protocols are approved for a maximum period of one year. Research must stop at the end of that approval period unless the protocol is re-approved for another term.

I further certify that the proposed research is not currently underway and will not begin until approval has been obtained. A signed approval form, on Office of Research Compliance letterhead, communicates IRB approval.

Primary Investigator Signature_____**Date** _____

(please print name) _____

Co-Investigator Signature_____**Date** _____

(please print name) _____

Faculty Advisor/Sponsor Assurance

By my signature as sponsor on this research application, I certify that the student(s) or guest investigator is knowledgeable about the regulations and policies governing research with human subjects and has sufficient training and experience to conduct this particular study in accord with the approved protocol. In addition:

I agree to meet with the investigator(s) on a regular basis to monitor study progress. Should problems arise during the course of the study, I agree to be available, personally, to supervise the investigator in solving them.
I assure that the investigator will report significant or untoward adverse events to the IRB in writing promptly, and within 5 working days of the occurrence.
If I will be unavailable, as when on sabbatical or vacation, I will arrange for an alternate faculty sponsor to assume responsibility during my absence.

I further certify that the proposed research is not currently underway and will not begin until approval has been obtained. A signed approval form, on Office of Research Compliance letterhead, communicates IRB approval.

Advisor/Faculty Sponsor Signature_____Date _____

please print name) n_____

*The faculty advisor/sponsor must be a member of the OU faculty. The faculty member is considered the responsible party for legal and ethical performance of the project.

APPENDIX E: INSTITUTIONAL REVIEW BOARD PROJECT AMENDMENT /

REVISION FORM

Ohio University
Institutional Review Board
Project Amendment/Revision Form

Federal regulations require IRB approval prior to implementing proposed changes to research projects. Such changes include any change to the originally approved proposal, including, but not limited to changes in number of participants, changes in recruitment/research procedures, and changes in supporting documents (consent form, debriefing form, questionnaires, advertisements, etc.)
Please complete this form, and **attach all revised documents** or supporting information.

Proposal #	**10E077**	Date	**8/6/10**

Proposal Title	**The Perceptions of Entry-Level Athletic Trainers Adequacy of Clinical Education in Preparation for Confident Professional Practice**
Revised Title	**Entry-Level Athletic Trainers' Perceived Adequacy of Clinical Education in Preparation for Confident Professional Practice**

Principal Investigator Information

Name	**Kayla Shinew**	Department	**Teacher Education/ Athletic Training**

Address	**4321 Pleasant Hill Rd Athens, OH 45701**

Email	**shinew@ohio.edu**	Phone	**814-233-9197**

Study Status

	Active (currently in progress)
	Project on Hold (pending approval of this amendment)
X	Project not yet started (no participants enrolled)
	Closed to new participant entry (data analysis/intervention occurring)

1. Describe the proposed changes and why they are being made.

1. Questions throughout the instrument have been revised and improved due to feedback gained through an expert panel review and pilot testing. The changes were made to improve the reliability and validity of the instrument. The content remains the same, however wording and rephrasing took place.

2. **Note my email address has also changed from ks404707 to shinew@ohio.edu**
3. **The title of the dissertation has also been revised to more succinctly identify the research**
4. **This research is funding through the College of Education Research Grant that I received in May 2010. This money will be used to purchase the contact information for subject recruitment.**

2. Describe how, if at all, the proposed changes affect the risks of the study.

The changes have no effect on the risk of the study.

3. Describe how, if at all, the proposed changes affect the benefits of the study.

The changes have no effect on the benefits of the study.

4. Does the revision affect the consent/assent document(s)?

Yes		No	**X**

a. If yes, will any participants need to be re-consented as a result of the changes? If so, please describe process to be used. Include two copies of the revised consent/assent documents, one with changes highlighted, and one without highlighting.

_____ _____

Principal Investigator Signature Date

_____ _____

Advisor Signature Date

If new investigator is added, a revised page 1 of the project outline form, a signed signature page of the Project Outline Form, and proof of training is required.

Please note that approval of an amendment does not change the expiration date of the study.

Please return this form to: Office of Research Compliance