IDENTIFICATION OF ESSENTIAL SKILLS FOR

ENTRY LEVEL ATHLETIC TRAINERS IN SOUTH

LOUISIANA: A DELPHI STUDY

By

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Title of Study: IDENTIFICATION OF ESSENTIAL SKILLS FOR ENTRY LEVEL
ATHLETIC TRAINERS IN SOUTH LOUISIANA: A DELPHI STUDY

Major Field: SCHOOL ADMINISTRATION

Abstract:

Context: Entry-level athletic trainers enter the workforce with the skills taught to them by athletic training programs (ATPs) using the Competencies developed by our accrediting body.

Objective: These competencies are developed using data collected from athletic trainers in the field with no input from the consumers of athletic training services.

Design: This study used a 3-round Delphi questionnaire.

Setting: Secondary schools located South Louisiana.

Participants: Six experts in the field of athletic training.

Data Collection and Analysis: In round 1, participants were first asked to identify individual skills within predetermined skill categories created from the Competencies and existing research. In rounds 2 and 3, participants ranked and rated their responses from round 1. Using Delphi methodology with qualitative and quantitative analysis, a Duty-Task List (DTL) was created from the data, which identified the essential skills for entry-level athletic trainers.

Results: Ranking of the skill categories produced four tiers, the top tier consisting of skill categories developed from the Competencies. The bottom tier consisted of two items, both from the Competencies: use of evidence-based medicine in practice and therapeutic interventions. Data further revealed communication, its many different forms, was the most important individual skill for entry-level athletic trainers.

Conclusions: The Delphi methodology used in this study was once again shown to be as effective as DACUM in producing an industry-supported DTL. In doing so, the participants gave a clear conceptualization of the essential skills needed as an entry-level athletic trainer, while also identifying some skills missing from the Competencies. Consideration should be given to the consumers of athletic training services when the next version of the Competencies is created. The athletic trainers on the panel consistently ranked higher skill categories from the Competencies, while the administrators on the panel ranked the non-competency skill categories higher. Additionally, there is still some resistance to increased use evidence in practice, which may be further proof of the chasm between what is considered desirable by clinical setting athletic trainers and academic setting athletic trainers.

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CHAPTER I

INTRODUCTION

As professionals, athletic trainers practice health care and collaborate with physicians to restore function to patients and clients. There are six practice domains in athletic training:

1. Prevention,

2. Immediate care,

3. Professional responsibilities,

4. Organization and administration,

5. Clinical evaluation and diagnosis, and

6. Treatment, rehabilitation and reconditioning of injuries occurring in the course of physical activity (Board of Certification, 2007).

With roots dating back to the original Olympic games in ancient Greece, athletic training is one of the oldest allied health professions in the world. There are 40,000 athletic trainers in the United States with many more similarly trained professional in countries across the globe. In order to practice as a Certified Athletic Trainer (ATC or AT), candidate must complete an approved Bachelors or Masters curriculum from a college or university, pass the national certification exam, and in 48 of 50 states,

apply and receive a state medical license or equivalent exam, and in 48 of 50 states, apply and receive a state medical license or equivalent (Board of Certification, 2013)

Three organizations work together for the advancement of athletic training: The National Athletic Trainers Association (NATA), the Commission on Accreditation of Athletic Training Education (CAATE) and the Board of Certification (BOC). The NATA is the professional membership organization for certified athletic trainers and others that support the profession. Founded in 1950 at the first national meeting in Kansas City with 200 members present, the NATA now has staff that outnumbers its original membership (NATA, 2013). All aspects of athletic training were housed under the NATA umbrella until 1989 when the BOC separated from the NATA in order to add credence to the certification process (BOC, 2013). Additionally, the committee within the NATA responsible for accreditation of Athletic Training Programs (ATPs), which began in 1991, separated from both the NATA and the Commission on Accreditation of Allied Health Educational Programs (CAAHEP) in 2006 becoming CAATE (CAATE, 2013). While the split into three organizations made the profession stronger and more in-line with other allied health professions, it did not weaken the importance of the NATA. Because the NATA is the clearinghouse for the entire professional membership, it is responsible for the creation of the Athletic Training Educational Competencies (The Competencies) through their Professional Education Counsel (PEC), which is housed within the Executive Committee on Education (ECE).

The current 5th Edition (2011) of the Competencies provides ATPs with the skills, knowledge and abilities that need to be mastered by entry-level athletic trainers before entering the workforce. The current edition of the Competencies has simplified twelve content areas down to eight:

1. Evidence-Based Practice,

2. Prevention and Health Promotion,

3. Clinical Examination and Diagnosis,

4. Acute Care of Injury and Illness,

5. Therapeutic Interventions,

6. Psychosocial Strategies and Referral,

7. Healthcare Administration, and

8. Professional Development and Responsibility.

It is expected that by mastering the Competencies, the entry-level athletic trainers can work competently with patients in any setting or age group. CAATE requires that the Competencies be taught in each ATP as they serve as a companion document to the current accreditation standards, which identify requirements to acquire and maintain program standing with CAATE. The Competencies are reviewed every few years with input from multiple sources within the profession: the PEC and ECE, and, specifically, the BOC who gathers feedback from practicing athletic trainers via the Role Delineation Study/Practice Analysis (RDS/PA), which is in its 6th Edition.

However, at no point is feedback from consumers of athletic training services used in the construction of the Competencies. In *Smart Thinking for Crazy Times: The Art of Solving the Right Problems,* Mitroff (1998) succinctly summarizes his entire thesis in stating, "Organizations that know how to think critically will dominate" (p. xi). As part of his reasoning, Mitroff talks about Type III Error, which occurs when organizations do not formulate the problem correctly leading them to "solve the wrong problem precisely" (p. 15). The athletic training profession has been committing Type III Error since the 1st Edition of the Competencies was published in the early 1990s. Imagine if

you will, a bakery, which takes feedback from all its cooks, the best oven-makers in the world, and uses only the best ingredients. Now, imagine this same bakery, but the bakery never asks the consumers that buy their goods what their favorite flavors are or what they can do to better meet the wants and needs of the consumer. This is how athletic training has treated its entry-level education process: no input or feedback from athletes, parents, coaches or athletic administrators in the education of entry-level athletic trainers.

Theoretical and Conceptual Framework

Competency-Based Education (CBE)

The psychological, philosophical and research traditions of Competency-based education (CBE) provide the primary theoretical foundation for this study. CBE was developed through requirements placed on educators to be accountable for the end product in the educational process (Elias & Merriam, 1995; Finch & Crunkilton, 1989). Finch and Crunkilton (1989) maintained the key component in CBE is competency, with the specific competencies being "tasks, skills, attitudes, values, and appreciations that are deemed critical to success in life and/or in earning a living" (p. 242). The concept of standardized basic competence can be traced back to medieval guilds where apprentices learned skills by working with a master. Once the student reached the standards required set by the trade, the student was awarded certain credentials (Horton, 2000). Athletic training is no different in this regard.

The *Commonwealth Teacher-Training Study* by Charters and Waples (1925) was the first published work to become synonymous with CBE. The study was built on the authors' argument that teacher training would be more useful if it included an analysis of teachers' activities and traits rather than opinion. By watching teachers who were excellent in their craft, Charters and Waples were able to form a master list of duties teachers perform in multiple settings. Seven main divisions of duties

were developed and incorporated into courses in teacher education curricula. The use of formal job analysis to identify development of appropriate traits, as in the Commonwealth Teacher-Training Study, approximated the current CBE curriculum approach where related traits are categorized into groups and content areas or domains are formed by comparable competencies or capacities (Schilling & Koetting, 2010). This skills grouping strategy is currently manifested in the industry-approved Duty Task List (DTL) which is described later in this dissertation.

The first CBE approach in medical education occurred in 1990, when the Society of Teachers of Family Medicine Task Force created a list of 26 competencies under five broad domains (Bell, Kozakowski, & Winter, 1997). Since that time, other allied health professions such as dental hygiene, pharmacy, physician assistant, physical therapy, nursing and athletic training have constructed frameworks (DeWald & McCann, 1999; Fey & Miltner, 2000; McCarty, Stuetzer & Somers, 2001; Peer & Rakich, 2000; Scott, Robinson, Augustine, Roche & Ueda, 2002; Sherer, Morris, Graham & White, 2006). These professions adhere closer to Spady's (1977) original definition of CBE, which is *A data-based, adaptive, performance-oriented set of integrated processes that facilitates, measure, record and certify within the context of flexible time parameters the demonstration of known, explicitly stated and agreed upon learning outcomes that reflect successful functioning in life-roles.* The curricula in each program do differ from Spady in that they are competency-driven and outcome-based. However, rather than life-role competencies, they generally are specific behavioral objectives (Schilling & Koetting, 2010).

Gray and Herr (1998) provided seven characteristics of CBE that can make it valuable in guiding industry-specific education and skill development:

1. The goal is to teach essential outcomes,

2. Outcomes are described in behavioral, observable, or criterion-referenced

   learning objectives,

3. Outcomes are taught in a prescribed sequence,

4. Instruction is narrowly focused on learning objectives,

5. Assessment is defined by the behavioral objectives and is typically in the

   form of demonstration or application,

6. A minimal level of competence is established which all students must

   obtain before continuing to the next behavioral objectives, and

7. Students or clients are provided with frequent/timely feedback regarding

   their performance (p. 149).

CBE is compatible with the psychological concept and educational philosophy of Behaviorism. John B. Watson "adamantly endorsed the idea that psychology was a science of behavior, not a study of the mind or mental activity" (Elias & Merriam, 1995, p. 82). Behaviorism was advanced by the writings of B. F. Skinner. According to Elias and Merriam, "Skinner firmly believes that humans are controlled by their environment, the conditions of which can be studied, specified, and manipulated. An individual's behavior is determined by the events experienced in an objective environment" (p.83). Skinner believed "a scientific analysis of behavior must assume that a person's behavior is controlled by his genetic and environmental histories rather than by the person himself as an initiating, creative agent" (Skinner, 1976, p. 208).

Modern Behaviorism aligns with the positivist research theoretical perspective and contends

that one arrives at knowledge through scientific observation and the measurement of facts (Elias & Merriam, 1995). To align Behaviorism with positivism logically supports objectivism as the epistemology because positivists focus on the world of science (Crotty, 1998). Their belief and confidence in science was derived from the idea that accuracy and certainty could result from scientific knowledge (1998). To express the connection between positivism and objectivism, Crotty (1998) stated:

> Whereas people ascribe subjective meanings to objects in their world, science really 'ascribes' no meaning at all. Instead, it discovers meaning, for it is able to grasp objective meaning, that is, meaning already inherent in the objects it considers. To say that objects have such meaning is, of course, to embrace the epistemology of objectivism. Positivism is objectivist through and through. From the positivist viewpoint, objects in the world have meaning prior to, and independently of, any consciousness of them (p. 27).

The grounding of CBE in the Behaviorist and positivist traditions is reflected in its insistence on clearly stated competencies stated in terms of observable and measureable learner behavior as the basis for assessing learning and success. The relationship of this approach to workforce training derives from its use of industry experts to identify the competencies required for successful on-job performance. Clear statement and objective assessment of these industry-identified competencies are the foundations of CBE (Blank, 1982). Furthermore, in allied health professions, the CBE framework applies these theories by stipulating "Students' behaviors can be controlled through an instructional stimulus producing an anticipated, quantifiable response whose measurement is compared against predetermined standards." (Schilling & Koetting, 2010). In athletic training, these predetermined standards are The Competencies identified by the profession.

The theoretical basis for CBE in health care education programs dates back to early industrial

innovation research conducted by Frederick Taylor. Taylor sought to define fair daily wage for his workers by breaking down each task performed on-job into its component part (Wren, 2005). He then measured the time to complete the task and was able to establish a standard for each task. In an era when mass production, efficiency and effectiveness were tantamount to success, Taylor's new methods eliminated waste and reduced errors (Pinar, Reynolds, Slattery, & Taubman, 2004). Educational behaviorists recognized this industrial theory could be applied in the classroom setting by dividing and sequencing course material. Scientific management theory thus laid the groundwork for CBE in professional programs and their activities such as conducting a job analysis (in athletic training, this is the Role Delineation Study) to discover the specific behaviors needed for a particular profession and carrying out those processes systematically to create standards (Schilling & Koetting, 2010).

Learning Over Time

The concept of learning over time provides another supporting frame for this study. This concept was introduced into the athletic training profession around the same time the internship route to certification was eliminated, but the concept itself is not new. By definition, learning over time is the documented, continuous process of skill acquisition, progression and student reflection (NATA Education Council, 2001). This reinforces the demonstration of a systematic progression through the cognitive, psychomotor and affective domains with differing educational settings (NATA, 2001). Houglum and Weidner (2001) explained learning over time as a continuum. On one end, the teacher instructs the individual skills and monitors progress closely. On the other end, the student progresses from taking individual skills learned, to using them meaningfully, as demanded of an entry-level athletic trainer. Students preparing to enter the profession need their actions to approach this end, reflecting an optimal level of proficiency.

It is difficult in many circumstances to transfer classroom knowledge into the clinical

professional setting. Before this process can begin, clinical proficiencies must be identified. Each of the clinical proficiencies is composed of psychomotor, cognitive and affective parts broken down into subtasks that serve as the foundation for a comprehensive proficiency (Amato, Konin, & Brader, 2002). At this point, an institutional plan can be developed and put into practice, which aids educators by providing a blueprint to mastery of the skills (Amato, 2001). Before formal documentation of clinical proficiencies occurs, advanced planning is needed to ensure each skill is given the appropriate emphasis and time to demonstrate learning over time. At the end of the student's education experience, a portfolio a is common method of documenting that learning did occur in respect to the clinical proficiencies (Amato, 2001). This portfolio should represent the "big picture" and not only that skills were taught and mastered. It should also incorporate many specific psychomotor, cognitive and affective competencies; in short, there should be proof the student can "do" a skill but also that the student can "select, administer and interpret information" (Amato, 2001).

Statement of the Problem

Athletic training has a set of foundational behaviors and competencies designed to ensure that athletic trainers (AT) are well prepared and job-ready when entering the workforce (Dicus, 2012; Massie, 2003, 2009; Weider, 1992). While the competencies are designed to help athletic trainers be job-ready, research indicates that employers find athletic trainers well prepared in some cases and in other cases, athletic trainers lack specific competencies that employers deem necessary (Buckley, 1989; Mandt, 1982; Massie, 2009; NCPI, 1998). Studies by Massie (2009) and Kahanov and Andrews (2001) found that new athletic training graduates lack interpersonal communication skills and employers of athletic trainers consistently ranked personal characteristics such as, oral and written communication, leadership and interpersonal communications, highest in their list of hiring criteria. Thus, a problem exists.

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While the competencies are designed to help athletic trainers be job-ready, employers sometimes find that they are not. One explanation for this problem is that the athletic training profession does not deem input from the outside (non-medical practitioners/consumers) as essential in the development of entry-level athletic trainers because it is not based in scientific research (evidence-based practice). This study addresses the problem of omission of practitioner/consumer input by gathering data from a Delphi panel of experts for the purpose of identifying essential skills for entering the workplace. Through identifying the essential skills, a Duty-Task List (DTL) can be created to assist policy makers in the formation of future editions of athletic training competencies.

Purpose of the Study

The purpose of this study is to solicit input from secondary school athletic administrators and athletic trainers to identify the essential competencies experts in the field deem necessary to prepare entry-level athletic trainers to join the workplace. This study is specifically focused on completing this purpose in the context of South Louisiana, where a large number of athletic trainers are educated and employed.

Research Questions

The following research questions guided this study:

1. What skills are identified as essential by the expert panel for entry-level athletic trainers to possess before entering into the workplace?

2. How do these essential skills rate, rank and cluster according to the panel of experts?

3. What skills are identified by the panel of experts as missing from the Athletic Training Educational Competencies?

4. From this research, what Duty-Task List (DTL) can be created that will be beneficial to policy makers?

Data Sources and Methodology

Data for this study was obtained from a group of secondary school athletic administrators. Skill categories for the initial questionnaire were taken from the Athletic Training Education Competencies, 5th Ed. Their creation and validity are discussed within the Review of Literature section of this dissertation.

This research study used a Delphi methodology to gather task analysis data utilizing a mixed-methods design for the gathering, analysis and interpretation of the data. The researcher developed questionnaires for use by the secondary school athletic administrators in South Louisiana. The initial questionnaire used open-ended questionnaire based on the eight competency areas listed previously, the second and third questionnaires used a more structured rating and ranking response mechanism to gather data.

Study Participants

According to Delbecq, Van de Ven, and Gustafson (1986), participants selected for the Delphi process need to include the following:

> …top management and decision makers who will utilize the outcomes of the
> study; professional staff members who are to support the outcomes; and the
> respondents to the Delphi question whose judgments are being sought as a part of
> the study (p.85).

Some researchers feel there is no general rule for selection of Delphi panel members but add that individuals who can be involved on the panel include the stakeholders, experts and facilitators (Linstone & Turoff, 1975). This goes along with Mitroff's thinking on Type III Error and not taking stakeholders into account when formulating solutions to complex problems. Ausburn (2002) urges researchers by concluding "The focus in selecting participants is not so much their representativeness

of a population, but their knowledge or expertise in the topic under examination" (p. 37).

For this study, the participants or Delphi panel consisted of 6 members from the following categories: athletic administrators at secondary schools with experience hiring an athletic trainer, currently practicing athletic trainers at secondary schools, and currently practicing athletic trainers that own or operate their own allied health facility with experience in hiring an athletic trainer for their facility. This final grouping was included due to the fact a large number of athletic trainers in South Louisiana are hired to perform other allied health duties, such as Physical Therapy assistant, in the mornings before going out to their clinical athletic training site.

Assumptions and Limitations of the Study

The following assumptions were accepted for this study:

1. It was assumed that the panelists selected for the Delphi possessed the expertise to determine the skills necessary for an entry-level athletic trainer.

2. It was assumed that the panelists who participated in the Delphi responded honestly and meticulously.

3. It was assumed that the researcher remained a neutral facilitator of the Delphi process and exerted no personal influence over its input or outcomes.

The study was bounded by the following limitation and delimitations:

1. The Delphi panel was limited to South Louisiana. Input ad expertise was not obtained from other areas of the state, thus limiting the generalization of the study's findings.

2. While in many physical therapy clinics, an athletic trainer performs the duties of personnel selection. The panel consisted of one such athletic trainer.

Significance of the Study

While the Competencies have been refined multiple times to meet the changes demands of the profession, are entry-level athletic trainers adequately prepared to succeed in the workforce? Clear identification of the essential skills is necessary to provide clarity and direction to future iterations of the Competencies. Furthermore, how does the lack of consumer input into the creation of the Competencies affect what is taught and what is missing from athletic training programs? To this point, identification of missing skills has not occurred. This study provided an opportunity to fill the identification gap and improved the quality of preparation available to athletic training students.

CHAPTER II

REVIEW OF THE LITERATURE

Athletic training education has gone through substantial changes from the formation of the NATA in 1950. Initially, students wanting a career in athletic training would study under an older, established athletic trainer at their university (Weidner & Henning, 2002). The first formal athletic training curricula started taking shape in the 1970s along with the creation of the first certification exam in 1969 (Grace, 1999). Since that time, the first athletic training education program became accredited, along with a formalized curriculum, and ending the internship path to the certification. This formalization of the curriculum, via input from athletic trainers in the field, has lead to a high rate of success of the BOC exam and high rates of perceived preparedness by entry-level athletic trainers (Massie, 2003; Starkey, 1995; Turocy, Comfort, Perrin, & Geick, 2000; Weidner & Vincent, 1992).

Even with these advances in education, consumers of athletic training services point out deficiencies in the preparation of entry-level athletic trainers (Carr & Volberding, 2012; Kahanov & Andrews, 2001; Massie, 2009). Massie (2009) found employers "less satisfied with entry-level athletic trainers' interpersonal and communication skills" and stated that "athletic training education should increase students' interpersonal interactions with parents, patients, athletes and coaches during their clinical education" (p. 74). This deficiency in athletic training education may come from a lack of input from external sources. Until recently, no standardized and valid

instrument exists to measure employer satisfaction with athletic training services. Carr and Volberding (2012) have noted that most accredited programs *create or borrow instruments based on their own needs* (p. 167).

Athletic training is not alone in this matter as other health professions have similar issues. Shemwell, Yavas, and Bilgin (1998) discovered through patient surveys that, *Doctors should focus on improving the 'how it is done' aspect of service rather than the 'what is done' aspects of service* (p. 163) in order to increase patient satisfaction. Nursing (Johansson, Oleni, & Fridlund, 2002) Dentistry (Corah, O'Shea, Pace, & Seyrek, 1988) and Physical Therapy (Beattie, Pinto, Nelson, & Nelson, 2002) all fought similar problems with consumer satisfaction. What sets athletic training apart is that these other health professions have acknowledge these short-comings years ago, developed instruments to measure patient satisfaction with service, identified and categorized these critiques and now address them as part of the students' curriculum. Athleitc training has not yet acknowledged this issue, which is what led to this researcher's interest in the problem.

Brief History of Athletic Training Education

Athletic training has a rich, but not lengthy, educational history. Two seminal journal articles, "Historical Perspective of Athletic Training Clinical Education" by Weidner and Henning (2002) and "The History and Evolution of Athletic Training Education in the United States" by Delforge and Behnke (1999) encapsulate the 20th century movement of athletic training education and display the process the profession took towards professional preparatory legitimacy.

Beginning with the establishment of the NATA in 1950, athletic training curricula did not follow too far behind, and more formal clinical education guidelines was established in the 1970s

(Weidner & Henning, 2002). For the first time, the NATA Professional Education Committee made an appearance and constructed a list of behavioral objectives, learning outcomes and 11 required courses (S-224). In the 1970's, however, athletic training education was limited to the courses already in place in universities and did not truly represent the behaviors an athletic trainer would use in practice. That being said, the original behavioral objective would become the conceptual framework for the 1st Edition of the Competencies in Athletic Training in 1983. (S-224)

The original Competencies in Athletic Training were also unique for the fact it used performance domains of a certified athletic trainer, which were identified in the initial Role Delineation/Practice Analysis (RD/PA) conducted by the certification arm of the NATA, the Board of Certification (NATABOC or BOC). (S-224) The 1982 *Role Delineation Study for the Entry-Level Athletic Trainer Certification Examination* was significant because it was the first time a defensible linkage could be demonstrated between the examination's content and the tasks performed by entry-level certified athletic trainers (Grace, 1999). Currently, the RD/PA:

> …identifies essential knowledge and skills for the athletic training profession and serves as a blueprint for exam development. The RD/PA validates importance, critically and relevance to practice for both broad content areas and tasks. The RD/PA is significant for content validity because it ensures that the domains of athletic training covered on the BOC exam reflect the range of practice settings (BOC, 2013)

The RD/PA allows educators to prioritize the tasks of an athletic trainer and establish the competencies an individual should have to perform satisfactorily. Without this survey feedback from practicing athletic trainers, the Competencies could never be established.

From 1969 until 2004, there were two routes to certification as an athletic trainer (AT or ATC). (S-224) The internship route, which consisted of minimum college courses but was heavy

on clinical experience, approximately 1500+ hours, to be eligible for the exam, and the curriculum route, in which the student took prescribed courses in an accredited athletic training program but with fewer required 600-800 clinical hours. As the NATA and the BOC continued to refine the RD/PA and thus, the Competencies over the next few years, the profession gained credibility. In 1990, the American Medical Association (AMA) formally recognized athletic training as an allied health profession due to its efforts to establish standards and guidelines for accreditation of education programs at the university level (S-225). It was at this point that the NATA established the Joint Review Committee on Educational Programs in Athletic Training (JRC-AT) and the NATA's standards and guidelines for athletic training education programs were approved by the AMA's Commission on Accreditation of Allied Health Education Programs (CAAHEP).

In 1997, the NATA's Education Council released 18 initiatives to further athletic training education; the most significant of these was the elimination of the internship route to certification (S-225). By 2004, the internship route was gone, leaving only those students who completed a CAAHEP-accredited athletic training program eligible for the certification exam. Along with the elimination of the internship route, the Education Council established guidelines for training of clinical instructors, thus formalizing preparation for those athletic trainers mentoring students in the field (S-225). This created a means for the directors of education programs to equip the clinical instructors in the proper way to teach, monitor and evaluate clinical performance of students, especially since a majority of those athletic trainers in the field had no previous formal teacher training (S-226).

From 1982-1999, four additional Role Delineation/Practice Analysis surveys were conducted by the BOC. These RD/PA updates caused the Competencies to fluctuate in number. The 2nd Edition of the Competencies in 1992 has 6 content areas of practice but increased to 12 content areas for the 3rd Edition in 1999 (S-226). Clinical proficiencies were developed and

incorporated in the 3rd Edition, with the desired effect being synthesis of similar cognitive, psychomotor and affective teaching objectives and description of them in a way that makes them measurable clinical skills (S-226). These proficiencies were put in place as a substitute to clinical-experience hours as a measure of the student's clinical learning.

By 2006, not long after the 4th Edition of the Competencies (2005) had been published, the JRC-AT became independent from CAAHEP and changed its name to the Commission on Accreditation of Athletic Training Education (CAATE). Today, CAATE is the agency responsible for the accreditation of more than 360 entry-level and 18 post-professional athletic training education programs (CAATE, 2013). The NATA, BOC and CAATE work collaboratively to develop and administer the standards for entry-level athletic trainers, each in its own role. CAATE mandates that the standards be taught in the educational programs as part of the accreditation process, BOC conducts the RD/PA (which in 2011 produced a 6th Edition) and the NATA, whose Education Committee uses the RD/PA to develop the Competencies for use. Currently, the 5th Edition of the Competencies (2012) has 8 content areas encompassing the 5 domains of practice established by the 6th Role Delineation/Practice Analysis. As one final validation of the Competencies and as preparation for creating the newest certification exam, the BOC performs a crosswalk analysis. This crosswalk analysis takes the skills identified in the RD/PA and locates them within the Competencies to make sure none were omitted. Through this cooperative effort, the BOC provides another level of quality assurance to the public (BOC, 2012).

Currently, CAATE along with the NATA and the BOC are examining the issue of making the Masters degree the entry point for the profession (NATA, 2013). While this issue will have far-reaching effects on how and who administers athletic training education, every member of Primary and Consulting work groups was an athletic trainer; there was no input from outside the profession. However, the work groups did access information regarding minimum degree

requirements (pg. 4) and program enrollment rates from other health professions (pg. 14). As the profession prepares to enter a new chapter in the education of its future practitioners, additional research on what is essential for entry-level athletic trainers to succeed will shape future editions of the competencies.

Athletic Trainers and Legal Liability in the Secondary School

Athletic trainers are seen as the standard bearers in athletic health care issues and as powerful advocates in children's health care issues such as concussions. Spearheaded by the NATA, the Youth Sports Safety Alliance (YSSA) joins more the 100 advocacy groups to *raise awareness, advance legislation and improve medical care for young athletes across the country* (Youth Sports Safety Alliance Website, 2014). Athletic trainers have been responsible in large part for youth concussion laws being passed in 49 states and the District of Columbia, as the medical community sees them as the true experts in the area of concussion management (Harmon, 2013; Meehan, d'Hemecourt, Collins & Comstock, 2011). Congress passed a resolution during the summer of 2013 titled *The Secondary School Student Athletes' Bill of Rights*, which outlines ten expectation areas for parents and students (YSSA website, 2013). Among those were *the right to have practices and games monitored by athletic health care team members" and "the right to immediate, on-site injury assessments with decisions made by qualified sports medicine professionals* (YSSA website, 2013).

The YSSA also established nine criteria for secondary schools to follow to establish a safe environment for their athletes to participate and acknowledges schools that meet all nine (YSSA, 2013). In the United States, 140 schools met this "Safe Sports School" award criteria, with only two being in Louisiana. Access to athletic training services is a concern as well, as approximately two-fifths of Louisiana high school students report access to athletic training services (LATA website, 2014). Louisiana is not alone in this issue of providing coverage to their

high school students. States with similar demographics, Tennessee and Oklahoma, reported like

numbers in regards to athletic training coverage of high schools. Both comparison states report

that as few as one-third of their high school athletes have access to an athletic trainer, with

Oklahoma having no schools meet the YSSA criteria and Tennessee having only four (Oklahoma

Athletic Trainers Association website, 2013; Tennessean website, 2013).

All of these facts have implications for secondary schools that are concerned about

liability in the event of a traumatic incident. The National Federation of State High School

Associations (NFHS) has multiple studies on the monetary value of treatments provided by

athletic trainers to secondary school athletes. The latest study in 2006 placed the value of on-site

therapy at one high school site that employs two full-time athletic trainers at 2.7 million dollars

(NFHS website, 2011). This does not begin to tally the amount of money saved by schools for

avoiding lawsuits and the resulting expenses associated with those types of litigation.

Stakeholders' View of Athletic Training Education

While athletic training education has made significant gains in quality and regulation,

some studies show that consumers want other things along with what is taught in the

Competencies. There is plenty of research demonstrating the effectiveness of the Competencies

and athletic training education programs (Dicus, 2012; Massie, Strang, & Ward, 2009; Schilling

& Combs, 2011; Williams & Hadfield, 2003). That is not the argument; rather, it is that there are

other content areas not yet in the Competencies that consumers of athletic training services would

like to see taught and nurtured during the entry-level student's time in the athletic training

education program.

In its simplest explanation, many education programs in a broad spectrum of vocations

have long been accused of overdeveloping students' analytical abilities while ignoring the

development of practical and personal communication skills. Mandt (1982) made the case for broad curriculum that teaches skills beyond the narrowing focus of profession preparation. Many feel that holders of the tools for success that employees in any field of study should:

> …take more courses in English, psychology, and business administration…and try to become better at communications and human relations. The more important function of professional education is to prepare the graduate for life and help him assume his proper role in the *Republica Christiana* (p. 49).

NCPI's *Changes* magazine (1998) examined another angle in how employers, as stakeholders in the education process, argue, *You need a college degree to work in my office, but we think that colleges need to do a better job of preparing students for employment* (p. 47). Citing data from the 1997 National Employer Survey (NES), NCPI discovered employers ignored schooling factors when hiring and the reputation of an applicant's school fell in importance when compared to the 1994 NES study. However, when involved with institutions via internship programs, employers tend to have better perceptions of their graduates. This gives more impetus for athletic training education programs to get their preceptors even more involved in the preparatory process than the mentor-student relationship. Having preceptors involved in classroom instruction and assisting in curricular decisions may be more beneficial than currently perceived.

Within the athletic training literature, Kahanov and Andrews (2001) identified 33 hiring characteristics across 7 factors; 4 of those 7 factors accounted for 64% of the variance across the study (p. 409). These four salient factors were personal characteristics, education experience, professional experience, and work-related attributes. Educational and professional experiences encompassed items contained within the Competencies and mentioned on the Role Delineation/Practice Analysis. This included possessing a graduate degree, military experience,

grade point average and college reputation. Personal characteristics accounted for 25% of the

variance in employers' hiring criteria, and those characteristics included self-confidence,

maturity, interpersonal skills, assertiveness, enthusiasm, ability to articulate goals, oral

communication skills, leadership, initiative, ambition and written skills. Not surprisingly, these

items had a high relationship (r = .90) among these variables. Lastly, work-related attributes such

as entrepreneurialism, willingness to relocate, and professional memberships made up another 5%

of the variance, for a total of 30% of the variance of employers' hiring criteria coming from

characteristics outside of the curriculum. The authors were careful to point out that 48% of the

employers surveyed were not athletic trainers and may value a different set of skills. A

conundrum has existed at all levels of athletic training for some time: athletic trainers are rarely

evaluated by fellow allied health professionals. More often than not, administrators with no

medical training make hiring, salary and retention decisions that effect not only the athletic

trainer but the students at the setting as well. At the secondary school level, the majority of

employers come from a teacher education bachelors program with an athletic background but not

necessarily a science-based preparatory program. The authors concluded with this advice for

athletic training educators and students, *Students should be introduced to employment practices*

during their educational preparation, yet *athletic training educators today spend a minimal*

amount of educational time on employment practices and procedures (p. 412).

In addition to hiring criteria, Massie (2009) examined employer perceptions of entry-

level athletic trainers by, *…surveying employers with regards to their satisfaction with recent*

athletic training graduates readiness and performance as allied health professionals (p. 70).

While 90% of employers felt their entry-level employees were prepared academically and

clinically, and all Competencies were rated good to excellent, when asked directly about

perceived deficiencies in entry-level athletic trainers, the most common responses were, "A lack

of interpersonal communication and procedural business skills" (p. 73). Likewise, Carr and

Volberding (2012) in their attempt to create a valid and reliable instrument to use in measuring employer satisfaction with athletic training education programs, found similar deficiencies while pilot testing their survey instrument. These findings together signify how much emphasis employers place on employee-business stakeholders and partners as well as the employer's satisfaction with a majority of athletic training standards. One suggestion for athletic training preparation by Carr and Volberding was to *…increase the students' interpersonal interactions with athletes, patients and coaches during their clinical education* (p. 74). Massie (2009) tied his study together with this advice, *…the most revealing research related to actual job performance has shown that employees who rate high on employer satisfaction surveys possess both the technical and interpersonal skills necessary to adapt to, and perform, entry-level jobs successfully* (p. 73).

The argument between time spent in academic preparation versus time spent gaining clinical experience in athletic training began when the decision to eliminate the internship path to certification was made. Even though many older practicing athletic trainers hold tightly to the belief the current curriculum path to certification makes for a *book smart* but ineffective clinical athletic trainer, studies before (Massie, 2003; Starkey & Henderson, 1995; Turocy et al., 2000; Weidner & Vincent, 1992;) and since (Dicus, 2012; Shinew, 2011) the elimination of the internship path show that is not necessarily the case. Additionally, the problems consumers see in the profession preparation of athletic trainers have been voiced before the elimination of the internship path to certification (Kahanov & Andrews, 2001) and are still present today (Carr & Volberding, 2012). The deeper problem from that point is that consumers' opinions are not being accounted for on a national scale in athletic training education. This argument is laid out in the next section of the literature review.

Health Professions and Stakeholder Feedback

One of the biggest agenda items at the NATA National Educators Conference last year was a discussion over what to call the athletic training profession. This is not a new argument as discussion within the profession has dominated for the last 20 years, and it is also not unique to athletic training. Vocation education went through a similar process a decade ago. In a response to a changing economy and in an attempt to shed its bad reputation, the name was changed to career and technical education. This reflected the academic and technical instruction many of the programs had incorporated over the years. The end result has not proven to make a substaintial change in public opinion since the name change (Butrymowicz, 2012).

Some within the athletic training profession believe the lack of credibility towards the profession stems from an ambiguous name. The name *athletic trainer* is often confused with other, non-allied health professions and is frequently misused in the media. Suggested alternative names have been met with lukewarm reception within the NATA membership and has resulted in only one consensus: the name should remain the same. Ultimately, members have agreed the time, effort and money needed to make the name change could be better used to educate the public on who we are and what we do.

This topic is broached here because it represents one of the select cases when outside opinions have been measured and used to make decisions for the athletic training profession. In this way, athletic training stands out from other health professions. Physicians, nurses, dentists and physical therapists all take into account the feelings and needs of their patients/consumers and incorporate this feedback into the educational process for the profession. Even a fast food corporation, such as Yum!, places both an email address and a toll-free phone number on Taco Bell cups in an attempt to elicit information from the consumer. Yet such inclusion of client input has not been included in developing curriculum and competencies for athletic trainers.

The literature suggests that customer satisfaction in health professions is complex

(Shemwell, Yavas, and Bilgin. 1998) and never is this complexity more evident than in the

doctor-patient relationship. It is not simply an exchange of commodity (health) but *the patient*

puts his/her very life in the doctor's hands and thus needs reassurance, both internal and external

that the patient's choice is a good one (p. 157). Shemwell et al. (1998) continue, *A more satisfied*

patient produces a stronger emotional bond while a unsatisfied patient, may feel betrayed and

become emotionally distraught because the bond between doctor and patient has been forsaken

(p. 157). Researchers have found that *Service quality has a strong direct effect on patient*

satisfaction and that *service quality interventions for physicians should be initiated as a means of*

improving patient satisfaction (Shemwell et al., 1998, p. 160). The implications for improving

physician practice discussed by Shemwell were improving bedside manner and giving more

individual attention. In terms of skill building for medical programs this could be demonstrated as

checking the patient's file upon entering the room. By doing this once entering the room, the

doctor could greet the patient by name, ask about previous complaints, and have common

conversation ground to stand upon.

In dentistry, patient satisfaction has been evaluated since Davies and Ware (1982)

identified five major dimension of patient satisfaction. Corah, O'Shea, Pace, and Seyrek (1988)

expanded this list to 10 behaviors that were significantly associated with patient anxiety

reduction. Most of the descriptors of dentists with high satisfaction rating had very little to do

with the actual medical practice. Dedication to prevent pain was ranked most important followed

closely by friendliness, working quickly, being calm, and giving moral support. Empathy and

communicativeness were also important correlates of patient satisfaction.

The nursing profession views *Patient satisfaction as a significant indicator of the quality*

of care (Johansson et al., 2002). In what seems somewhat significant and relevant to the athletic

training profession, Johansson and associates (2002) acknowledge, *To improve the quality of*

nursing care, the nurse needs to know what factors influence patient satisfaction (p. 337).

Nursing has broken down patient satisfaction into eight different content areas. At the core, nursing has found, similar to previous deficiencies identified in entry-level athletic trainers, *The patient places high value on the interpersonal care provided by the nursing staff* (Johansson et al., 2002, p. 337). Some important research conclusions were the negative relationship between patient satisfaction and long-term quality of care, and that using patient feedback in continuing education for nurses can improve patient satisfaction and possible nursing staff job satisfaction (Johansson et al., 2002).

An interesting element to patient satisfaction is the element of choice. When there is a large amount of choice when selecting a product, a few characteristics make can make the difference. Physical therapy recognizes that patient satisfaction affects choice and has designated it as a variable of critical importance (Beattie et al., 2002). One study found, *Patients who report high satisfaction with care are more likely to continue the relationship with the health care practitioner, to seek additional medical care when needed and to adhere to recommended treatment plans* (Beattie et al., 2002, p. 558). As in the other health professions mentioned in this review, interpersonal characteristics ranked high in the eyes of physical therapy consumers. Patient-physical therapist interaction, being treated with respect and being involved in treatment decisions all scored high on measures of patient satisfaction (Beattie et al., 2002, p. 561).

Over the last three decades, there has been an increasing interest in how patients as consumers experience health care (Larsson, Nelson, Gustafson, & Betalden, 1996). Each one of the health professions mentioned above has gone through a process of identifying what make them satisfactory in the eyes of their consumer. However, athletic training has not integrated patient satisfaction information into its feedback loop; it remains a closed circuit. Carr and Volberding (2012) have developed two surveys designed to open the feedback loop to outside information. The surveys, the *Athletic Training Alumni Opinion Survey* (ATAOS) and *Athletic*

Training Employer Opinion Survey (ATEOS), are both valid and reliable but because of the

established dearth of employer feedback on entry-level athletic trainer performance,

benchmarking data will only be available as more programs implement these surveys (p.175).

CAATE does prescribe various outcome measures to determine program effectiveness that

includes but not limited to employer and/or alumni surveys (p. 175). However, only the Carr and

Volberding (2012) surveys are currently available for use by athletic training education programs.

Presumably, the aim of standardizing athletic training curricula was to improve both the technical

knowledge and practical skills of athletic training students (Peer & Rakich, 2000), which suggests

feedback from all stakeholders should be considered.

Application of Delphi Method in Athletic Training Research

The Delphi method, which is discussed in more detail in Chapter III, should not be

viewed as a scientific method for creating new knowledge, but as a process for making the best

use of available information, be that scientific data or the collective wisdom of participants

(Murphy, Black, Lamping McKee, Sanderson, Askham, & Marteau, 1998). A 2008 study by

Sandry and Bulger found two instances where the collective wisdom of athletic trainers were used

to fulfill the increasing requirements for evidence-based practice in the profession and to establish

policies and procedures where none previously existed. This plays into the strength of Delphi

methodology, which is most useful when the complexity of the problem exceeds the intellectual

capabilities of a single decision-maker (Clayton, 1997).

In athletic training, the Delphi method was used to develop competencies, standards and

criteria where none previously stood. Kutz (2006) used the Delphi method to bring together

professionals to identify leadership competencies important for practice and inclusion in athletic

training education programs. The Delphi method was also used to develop standards and criteria

for clinical instructor educators (CIEs) to use as a selection, training and evaluation of approved clinical instructors (ACIs) (Weidner & Henning, 2004). By contrast, Erickson and Martin (2000) sought the guidance of experts in the field to determine the factors that athletic training educators perceived as contributing to first-time success on the Board of Certification (BOC) exam.

The flexibility of the Delphi Method for collecting data makes it ideal for the athletic training profession's unusual working hours and stressful environment. The feedback mechanism still provides for individual responses for the final development of evidence-based and best clinical practices. The Delphi method in athletic training has been used to fulfill the need for evidence-based practice and the need to establish policies and procedures. While the Delphi method should not be viewed as the mechanism for new knowledge, it is a powerful tool for the utilization of the current available information.

Delphi as alternative to DACUM in Athletic Training Research

Developing A Curriculum (DACUM) is a specialized methodology that has been traditionally used for developing an occupation analysis and industry-based DTL. Similar to Delphi, DACUM uses occupational experts to identify skills and tasks required of individuals in a particular occupation. The DACUM panel functions as a group in a face-to-face (F2F) environment under the guidance of a trained DACUM facilitator over a period of two to four days (Blank, 1982; Finch & Crunkilton, 1989). The end product of DACUM is the Duty Task List (DTL) in which woring competencies are stated as "tasks" which are listed in related groupings called "duties" (Blank, 1982).

The Delphi method is similar to DACUM in that Delphi method can be used for the same purposes as DACUM, as well as, many other analysis across multiple industries. While a DACUM session can be completed in two to four days, it can be difficult for experts to assemble

for multiple days away from the office. Because of the time constraints and the unusual working schedules of athletic trainers, it is difficult to gather a group of expert in one venue for a few hours and near impossible to ask them to take multiple days off, especially when sports are in-season. Many athletic trainers work multiple sports further complicating the issue. Delphi method allows athletic trainers to provide feedback when their schedules allows, making Delphi a much more useful methodological tool. Additionally, the distance use of Delphi, either through email or paper mail, allows for more openness through increased anonymity.

Both methods meet requirements for industry-driven analysis. The intersection of DACUM and Delphi is a 3-round Internet Delphi, which meets the theoretical requirements of CBE and task analysis while accomplishing accessibility by the industry experts. For these reasons, this method was selected for this dissertation.

Summary and Link to the Study

Legitimacy does not equate to satisfaction in the eye of the consumer. Medical doctors, doctors of osteopathy, dentists, nurses, physical therapists and athletic trainers are all legitimate health professions with the backing of a proper prescribed educational preparatory process and years of scientific research to reinforce the credibility of each practice. However, each branch of medicine has experienced its own shortcomings with the purchaser of their services. All medical professions, except athletic training, have found a mechanism for identifying profession-specific elements of patient satisfaction with the purpose of improving patient care. One common thread from all the professions regarding measured patient satisfaction is interpersonal relations elements, such as time spent with patient. Ironically, no other health profession spends more time in direct contact with its consumer than athletic trainers.

As a newer health profession, athletic training may simply be behind in its methodology of surveying its consumers on areas of improvement to facilitate growth of the educational

process. Another possibility is that the athletic training profession views the consumer as not having an opinion worth hearing. In either case, athletic training has recently begun to develop a process to garner feedback from the consumer base. At this pace, it will be at least the 6th edition of the Competencies before these changes are integrated into the curriculum and only then will consumers see their suggestions put into practice. This study represents a step towards realization of this important goal.

CHAPTER III

METHODOLOGY

Research Model

General Research Approach

This study collected the opinions of a panel of experts in the area of secondary school athletic training for the purpose of identifying the essential skills used in an athletic training curriculum along with other athletic training hiring criteria that are documented in previous research literature. A descriptive research approach using a mixed methods design was used to gather, analyze, and interpret the data through a Delphi strategy. Delphi was used in this study in order to preserve the outcomes of task analysis, and to accomplish this without face-to-face data input format that could have prevented some secondary school athletic administrator experts from participating. By using Delphi, this study retained expert industry input, anonymity, and consensus building through multiple iterative rounds with unstructured original input, followed by successive rounds of structured feedback and quantitative re-analysis. This was accomplished through email distribution that eliminated the need for secondary school administrators to take more time than was necessary off from their jobs, which may have precluded their involvement in this study.

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Curriculum Development in Athletic Training: DACUM and Delphi Methods

A curriculum is all the activities, both didactic and clinical, a student is involved in during a period of time in order to successfully finish a predetermined course of study (Crowder, 1997). One of the primary approaches to curriculum development in workforce education is the Developing a Curriculum (DACUM) method. DACUM establishes research-based content for a new or rapidly evolving program of study (Miller, 2000), using content experts who are most familiar with a specific discipline of course of study to determine the changing curricular needs of a program (International Labor Organization Website, 2014). The DACUM committee achieves this via group face-to-face meetings, with guidance from a trained facilitator over the course of two to four days (Blank, 1982; Finch & Crunkilton, 1989). The final product of the DACUM committee is a Duty-Task List (DTL), which includes a listing of on-the-job competencies called "tasks", and the "tasks" are grouped in related categories or "duties" (Blank, 1982). DACUM is used effectively in emerging disciplines having exposure to diverse settings; athletic training fits this criteria (Carr & Drummond, 2002).

The one drawback to DACUM is the necessity of face-to-face meetings, which can hamper openness of ideas and eliminates anonymity (Kutz & Scialli, 2008). Brown (1968) addressed the Delphi as a substitute for DACUM by using a non-face-to-face process by replacing direct confrontation by a carefully planned, orderly sequence of individual interrogations via questionnaires (p. 3). The Delphi Method, "allows the versatility of being administered either face-to-face or at a distance, which adds a level of anonymity for the experts in their reporting process (Ward, 2010, p. 8). Delphi Methodology expands the use of internet participation, which eliminates missed time at work, and Delphi Methodology was used more than 300 times in allied health literature (Bowles, 1999). The point at which DACUM and Delphi

cross is the 3-round Internet Delphi (Ward, 2010), and with that rational was the data collection method for this research.

Specific Research Model: Delphi Method

Sackman (1995) explained "The Delphi technique was started by an Air Force-sponsored project with the RAND Corporation in the early 1950's with related studies started as early as 1948 (p. 11)". Delphi methodology:

> Entails a group of experts who anonymously reply to questionnaires and subsequently receive feedback in the form of a statistical representation of the 'Group Response', after which, the process repeats itself. The goal is to reduce the range of responses and arrive at something closer to expert consensus. (Rand website, 2013)

The Delphi technique is noted as having the ability "to educate the respondent group as to the diverse and interrelated aspects of the topic" (Delbecq, Van de Ven, & Gustafson, 1975, p. 11). A consensus of opinion from panel experts for the purpose of forecasting future events or possibilities was originally the expected results from the technique (Colding, Colwell, & Smith, 1977; Weaver, 1971). However, this has been extended through usage to incorporate a variety of decision-making purposes. The Delphi method has been noted for its curriculum development ability and its ability to yield results from expert panelists while eliminating the need for gathering a committee and for maintaining anonymity for the panelists in a face-to-face forum (Linstone & Turoff, 1975). Relatively recent dissertation studie by Brown (2007) and Ward (2012) addressed curriculum development issues through use of Delphi techniques.

In order to construct a consensus of opinion from a group of experts, the Delphi method uses multiple rounds or iterations. In describing a Delphi process, Ludwig (1994) reported:

Iterations refer to the feedback process. The process was viewed as a series of rounds; in each round every participant worked through a questionnaire which was returned to the researcher who collected, edited and returned to every participant a statement of the position of the whole group and the participant's own position. A summation of comments made each participant aware of the range of opinions and the reasons underlying those opinions. (p. 55)

Linstone and Turoff (1975) noted that "What distinguishes the Delphi from an ordinary polling procedure is the feedback of the information gathered from the group and the opportunity of the individuals to modify or refine their judgments based upon their reaction to the collective views of the group" (p. 22). They asserted that three to four rounds are generally enough in order to bring clarity to the groups' views (Linstone & Turoff, 1975, p. 86). Rotondi and Gustafson (1996) noted the following advantages of the Delphi technique:

… ability to conduct a study in geographically dispersed locations without physically bringing the respondents together; time and cost-effectiveness; allows participants time to synthesize their ideas; allows participants to respond at their convenience; the anonymity of participants provides them with the opportunity to express opinions and positions freely; the process has proven to be effective in a variety of fields, problems, and situations. (p. 37)

Hsu and Sandford (2007a) stated that the listed advantages for the Delphi collectively serve as a control feedback mechanism for possible noisy group dynamics that could occur in a face-to-face communications environment. They cited Dalkey (1972) in reporting that "noise is that communication which occurs in a group process which both distorts the data and deals with group and/or individual interests rather that focusing on problem solving" (Hsu & Sandford, 2007a, p. 2). With the anonymity of input element and the multiple input iterations, Delphi research is well equipped to interpret obtained statistical data and bring forth the consensus opinions of the panel members (Hsu & Sandford, 2007a; Linstone & Turoff, 1975).

Delphi methodology employs components of Lockean inquiry systems, which tie directly into the idea of using experienced observers as the creators of and analyzers of curricula (Mitroff & Turoff, 2002). The first characteristic of Lockean inquiry is "truth is experiential, that is to say

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that the truth of a model is measured in our ability to reduce every complex proposition down to its simple empirical referents (observations) and to ensure validity of those referents by means of widespread, freely obtained agreement between different human observers" (p. 20). Mitroff and Turnoff (2002) described a second characteristic, which is a corollary to the first, that the truth of a model does not rest upon considerations or assumptions, and data comes before and theory, not the other way around. The only general propositions that are accepted are those that can be justified through "direct observation" (Mitroff & Turoff, 2002, p. 21). In summary, Lockean inquiry systems, like Delphi, are experimental, consensual systems that start from a set empirical judgments, building up a network of ever expanding, more general network of factual propositions. Induction, rather than deduction, is at the heart of Lockean inquiry. Raw data is prior to and independent of theory, and one does not need any theory to collect data first, only to analyze it subsequently. Delphi is a classic example of Lockean inquiry and such inquiry is still the prime philosophical basis of the Delphi technique to date (Mitroff & Turoff, 2002, p. 22).

While the Delphi technique has many advantages, Sackman (1975) noted some disadvantages for this methodology:

- The lack of opportunity for social-emotional reward in problem-solving leads to feeling of detachment from the problem-solving effort.
- The lack of opportunity for verbal clarification or comment on the feedback report creates communication and interpretation difficulties among respondents.
- Conflicting or incompatible ideas of the feedback report are handled by simply pooling and adding the votes of group respondents. Thus, while this majority rule procedure identifies group priorities, conflicts are not resolved.
- Reinforcing and institutionalizing premature closure of results; giving an exaggerated illusion of scientific precision.
- Developing a fallacy of the expert halo effect.

• Developing no serious critical literature to test basic assumptions and alternative

hypotheses (p. 35, pp. 73-74)

These potential disadvantages of Delphi were recognized and acknowledged by the

researcher. However, it was felt that the advantages presented by the Delphi outweighed its

disadvantages for this particular research and the disadvantages were accepted as limitations of

the study's methodology.

Mixed-Methods Research

The mixed method of approaching research is relatively new to the world of educational

research. According to Creswell (1998), "The concept of mixing different methods probably

originated in 1959, when Campbell and Fiske (1959) used multiple methods to study validity of

psychological traits" (p.15). Campbell and Fiske's (1959) study prompted other researchers to try

multiple research methods and the multiple methods helped to neutralize biases inherent in a

single method (Creswell, 1998). Both quantitative and qualitative research techniques were used

in this Delphi study for data collection and analysis. The study used a qualitative/quantitative

blend described by Brown (2007) as the sequential exploratory approach as its specific mixed

methods model. The first Delphi round was qualitative; it elicited open-ended responses from the

participants regarding important skills for entry-level athletic trainers. These data were analyzed

qualitatively using thematic analysis and coding. The second and third rounds were

quantitative, using structured responses based on rating and ranking techniques, and statistical

calculations.

Research Methodology for this Study: Three-Round Mixed-Methods Electronic Delphi

The specific research methodology for this study was a three-round Delphi as

recommended by Linstone and Turoff (1975) and Ausburn (2003), and demonstrated by Brown

(2007) and Ward (2010). Study questionnaires and responses were transmitted electronically

using mixed-methods described by Brown (2007) in her study of skill standards in the aviation industry. A group of experienced secondary school athletic administrators were solicited to participate as the Delphi panel for this study. The Delphi surveys were administered via e-mail using Microsoft Word documents. For this reason, participants were required to have computer access with word processing capability, Internet access, and the skills necessary to input into an electronic form.

The Delphi Panel

According to Delbecq, Van de Ven, and Gustafson (1986), participants selected for the Delphi process need to include the following:

> …top management and decision makers who will utilize the outcomes of the
> study; professional staff members who are to support the outcomes; and the
> respondents to the Delphi question whose judgments are being sought as a part of
> the study. (p.85)

Linstone and Turoff (1975) felt that there was no general rule for selection of panel members but added that individuals who can be involved on the panel include the stakeholders, experts, and facilitators. Ausburn (2002) made it clear that "The focus in selecting participants is not so much their representativeness of a population, but their knowledge or expertise in the topic under examination" (p. 37).

Participants for the Delphi panel for this study had to be in South Louisiana and meet one or more of the following specific criteria to be considered for inclusion:

- Two secondary school athletic administrators having a minimum of 5 years of experience in their particular job, presently employed in the secondary school or private school setting, with experience hiring an athletic trainer for their school.

- One athletic trainers who own or operate their own allied health facility that hires athletic trainers for their facility, or

- Three currently practicing athletic trainers at the secondary school worksite with five or more years experience in the field.

An e-mail was sent explaining why this particular individual was being solicited to participate in the research and requesting his/her participation. According to Brown (1968), "a man's expertness might be judged by his status among his peers, by his years of professional experience, by his own self-appraisal of relative competence in different areas of inquiry, by the amount of relevant information to which he has access or by some combination of objective indices and a priori judgment factors" (pp.3-4). All the above mentioned selection criteria meet Brown's litmus test by encompassing practitioners of athletic training, those that hire athletic trainers using their previous athletic training experiences as a guide, and those that hire athletic trainers without the benefit of previous experience in the profession but with an understanding of the needs of their environment.

South Louisiana was chosen for this study and its participants for several reasons. Interstate 10 in the main east-to-west thoroughfare through south Louisiana and connects six of the seven most populous cities in the state. Of the six CAATE-approved athletic training education programs within Louisiana, 4 are within 25 miles of Interstate 10. The population center for the state of Louisiana is located near the city of New Roads, a few miles north of Interstate 10 (U.S.Census, 2010). When examining the largest classification in Louisiana high schools sports, there are 71 schools with an average daily enrollment over 1,115 students, 58 are located in South Louisiana. Unlike Central and North Louisiana, the rural areas of South Louisiana consolidate their students into larger schools, whereas North and Central Louisiana favor smaller, more frequent rural schools. For athletic administrators and athletic trainers, South Louisiana is the hub in the state for education and where their greatest numbers of opportunities to be hired to work in

the secondary school exist.

Procedures

This study used instruments and procedures adapted from previous studies, initially by Brown (2007), who studied skill requirements for professional pilot training programs, and later by Ward (2010), who examined the entry-level skills for legal assistants, both using Delphi methodology. Before data collection could begin, approval from the Oklahoma Stat University Institutional Review Board was gained (see Appendix G). Delphi panel participants were then solicited via email and permission to participate was granted by returning the first round of the questionnaire (see Appendices A and B). The first round of this Delphi study began with a qualitative analysis through the use of open-ended questions. Panel participants were asked to list essential skills for entry-level athletic trainers in 14 categories. The initial questionnaire was delivered via email.

The data collected in Round One was used to develop the second round questionnaire. This procedure followed the suggested route by Hsu and Sandford (2007a). Summary feedback and analysis of the first round were then sent to the expert panel of participants for them to rate and rank individual items within their category. After second round data was returned, it was quantitatively analyzed looking for breaking points within each category for rank and rating. The third round asked the panelists to review a summary of second round data and to make rating and ranking revisions as they deem necessary. These procedures were in alignment with recommendations from Ausburn (2002), Brown (2007), Hsu and Sanford (2007a) and Ward (2010). Details of analytic procedures and calculations are presented in Chapter IV.

Instrumentation

The Delphi technique was used to conduct this research study. Three questionnaires were developed by the researcher for use with the expert panelists. An open-ended questionnaire will

be designed for round one and will be emailed to the panelists upon receipt of their consent to participate. Panelists were asked on the questionnaire to provide their perceptions regarding skills standards for entry level athletic trainers in South Louisiana. Upon receipt of round one by the researcher round two feedback was compiled using qualitative analysis techniques and a new input form was provided to the panelists for item rating and ranking. Upon receipt of round two, round three feedback was compiled and provided to the panelists to complete final rating and ranking of the data. All instruments used in this study were adapted from those used by Brown (2007) and Ward (2010) in a similar studies of program standards in the aviation industry and legal office staff. The questionnaires for all rounds may be found in Appendices C, D and E.

Data Analysis

Data analysis procedures and techniques included qualitative content analysis (Round 1) and descriptive statistical calculations based on item rating and ranking procedures (Rounds 2 and 3). Data analysis details are presented in Chapter IV along with the findings they yielded.

CHAPTER IV

RESULTS

Summary of the Study

The purpose of this study was to solicit input from secondary school athletic administrators and athletic trainers to identify and describe the essential competencies experts in the field deem necessary to prepare entry-level athletic trainers to join the workplace. The following research questions directed this study:

1. What skills are identified as essential by the expert panel for entry-level athletic trainers to possess before entering into the workplace?

2. How do these essential skills rate, rank and cluster according to the panel of experts?

3. What skills are identified by the panel of experts as missing from the Athletic Training Educational Competencies?

4. For this research, what Duty-Task List (DTL) can be created that will be beneficial to policy makers?

With the help of a panel of six experts in the field of athletic training and athletic administration, 14 pre-determined categories were established for the purpose of gathering the essential skills necessary for entry-level athletic trainers. The study used a three-round, electronically administered Delphi questionnaire to identify the skill standards and then combine them into a traditional Duty Task List (DTL).

Data Analysis and Findings.

A three-round Delphi process was used to bring together the panel's knowledge and experiences regarding the skills essential for entry-level athletic trainers and answer the research questions. Six panelists agreed to participate in this study and all six completed all three rounds. The first Delphi round was open input and the Delphi panel of experts in the athletic training field were given these instructions in the 1st Round of Delphi Methodology:

List the specific skills you look for as an employer underneath the categories listed below. The categories listed are there to supplement your assessment, but it is not a complete list. If you have responses that do not fit a particular category, please list it under Comments.

Category 1: Use of Evidence-Based Medicine in Practice

Category 2: Injury Prevention and Health Promotion

Category 3: Administrative Responsibility

Category 4: Clinical Examination and Diagnosis

Category 5: Quality of Educational Experience

Category 6: Acute/Emergent Care of Injuries and Illnesses

Category 7: Personal Characteristics

Category 8: Therapeutic Interventions (Modalities, Rehab)

Category 9: Workplace-Related Attributes

Category 10: Psychosocial Strategies and Referral

Category 11: Business Skills

Category 12: Healthcare Administration

Category 13: Professional Development & Responsibility/Commitment to the Profession

Category 14: Interpersonal Communication Skills

Panelists were also free to include anything they wished in their lists of skills.

From round one, the panelists suggested 97 skill items within the 14 specific categories to answer research question #1. These items are revealed in the data that follows in this chapter. In round two, the panelists were provided with feedback consisting of the top items in each category (n=4 to 10), along with the frequency of listing by panelists in round one. Panelists then rated the importance of each category and each item within each category on a five-point Likert-like scale as below:

1-not important
2-somewhat important
3-moderately important
4-important
5-very important

The panelists then ranked the 14 categories and the items within each category in descending order of importance for the purpose of establishing a sigma rank score. *Sigma rank* or ΣRank scores were computed by summing the panel-assigned ranks to each category and each item in each category. The panelists' first choices were assigned rank 1 and the *nth* choice listed as rank *n*; they were instructed to assign no tied rankings.

Round three included feedback from Round 1 and were then asked to again rank the categories and the top-ranked items in each category. Item breakdown by category revealed ten items in categories 3 and 7; nine items in category 9; eight items in categories 2, 4 and 13; seven items in category 12; six items in categories 1, 6 and 11; five items in categories 8, 10 and 14; and four items in category 5. *Rank points* were assigned to each item in each category as follows, based on the rankings assigned by the participants:

Rank 1 = 10 points
Rank 2 = 9 points
Rank 3 = 8 points
Rank 4 = 7 points
Rank 5 = 6 points
Rank 6 = 5 points
Rank 7 = 4 points
Rank 8 = 3 points

Rank 9 = 2 points
Rank 10 = 1 point

The *sigma rank points* or ΣRankPoint score for each item was computed by summing the rank points assigned to each item by the panelists. Procedures used by Brown (2007) and Ward (2010) and recommended by Ausburn (2002) were followed: "Based on their ΣRankPoint scores, the items in each category were ranked from high to low and were assigned item numbers corresponding to the ranking of their scores. Thus, item number 1 became the item with the highest ΣRankPoint score and the highest rank order (#1)" (Brown, p. 62). A mean rating of importance was also calculated for the overall categories along with the ΣRank and final ranking.

For this study, as with Brown's and Ward's studies, grouping or *tiers* of rated/ranked items were identified. Following the statistical procedures recommended by Ausburn (2002) and by Brown (2007) and Ward (2010): *The ΣRank and ΣRankPoint scores provided the clearest indicator of cluster rankings both in the category analysis and the analysis of items within categories* (Brown, 2007, p. 63). The mean importance rating score provided a secondary indicator in identifying clusters, tiers and in a couple of instances, broke ties between items of equal ΣRankPoint. The ΣRanking points were considered the primary criteria because they represented perceived *relative* importance in a forced-choice decision of the panelists. In order to identify clusters of categories and items within the categories, tier analysis was performed on the ΣRank scores of the categories. For this analysis, point ranges within and between clusters were examined to identify tiers. A dotted line was used in tabled results to delineate the different tier levels identified (Brown, 2007). The rating and ranking practice analysis data reported in Tables 1-15 address research question #2.

All final rating and ranking analyses were performed on round 3 data. The first analysis identified the relative importance of the 14 skill categories themselves by rating and ranking scores assigned to the 14 skill categories by participants. The results are shown in Table 1. Two

categories separated themselves in importance into a first tier group: Clinical Examination and

Diagnosis along with Injury Prevention and Health Promotion. Four tiers of skill categories were

identified. Tier two was comprised of Acute/Emergent Care of Injuries and Illnesses,

Interpersonal Communication Skills, and Administrative Responsibility. Tier three was tightly

grouped with the categories Workplace-Related Attributes, Professional Development &

Responsibility/Commitment to the Profession, Personal Characteristics, Psychosocial Strategies

and Referral, Quality of Educational Experience, Business Skills and Healthcare Administration.

The final tier was comprised of Therapeutic Interventions and Use of Evidence-Based Medicine

in Practice.

Table 1

Category Analysis: Mean Importance Ratings, Rankings and Tiers of Criterion Skill Categories

Category	Mean Rating	ΣRankPoint	Final Rank
Clinical Examination and Diagnosis	4.83	76	1
Injury Prevention and Health Promotion	4.83	70	2
....			
Acute/Emergent Care of Injuries And Illnesses	4.83	60	3
Interpersonal Communication Skills	4.50	55	4
Administrative Responsibility	4.17	51	5
....			
Workplace-Related Attributes	3.83	43	6
Professional Development & Responsibility/ Commitment to the Profession	4.00	42	7
Personal Characteristics	3.83	39	8
Psychosocial Strategies and Referral	3.83	37	9
Quality of Educational Experience	3.17	36	10
Business Skills	2.83	35	11
Healthcare Administration	3.67	34	12
....			

Table 1 (continued)

Therapeutic Interventions	4.00	28	13
Use of Evidence-Based Medicine in Practice	3.83	21	14

After rank-order and tier identification for all 14 skill categories, additional analysis was conducted on the individual responses within each category. Tables 2 through 15 present the complete skill analysis for each category with the categories tabled according to their final rank order. Major break points among the individual skill categories were identified with the use of tier analysis that clustered items according to their ΣRankPoint ranges.

Table 2

Skills Analysis: Clinical Examination and Diagnosis   *(Category Ranking = 1, N = 6)*

Item	Mean Rating	ΣRankPoint	Final Rank
Understands return to play criteria vs. Referral Criteria	4.67	52	1
Uses proper techniques to minimize professional liability	4.67	49	2
Ability to relay critical information to physician	4.83	48	3
Ability to determine differential diagnosis	4.50	42	4
How to complete a full and thorough exam	4.00	37	5
Commitment to practice examination skills	4.17	34	6
Using physicians to increase examination competency	4.00	28	7
Proper note taking during examination	3.50	22	8

The Clinical Examination and Diagnosis category (Table 2) was ranked number 1 by the panel and they submitted and later ranked 8 items specifically related to understanding return to play criteria vs. referral criteria; using proper techniques to minimize professional liability; and

ability to relay critical information to physician as their top choices. The ΣRankPoint gave the clearest indicator of tier breaks when analyzing items, with mean rating serving as a secondary indicator, and in one case, a tie-breaker between ranked items.

The first skill tier of the Clinical Examination and Diagnosis category gave three tangible examples of essential skills, the middle tier denoted more advanced examination skills typically seen in more experienced athletic trainers, and lower tiers gave more generalized feedback on how to increase previously acquired skills. As a whole, all of the items mentioned gave a well-rounded picture of what skills are essential and what should be incorporated into the vocational preparation.

The Injury Prevention and Health Promotion category (Table 3) was the second-ranked category and had 8 ranked items. Incorporate injury examination with appropriate techniques to prevent injuries; proficient in taping/strapping; and educate athletes, parents and coaches regarding injuries before they occur made up the top tier. These were followed by proficient in protective padding; understands the effect of environment on athletic participation. The third tier comprised knowledge of nutritional supplementation and regulations regarding supplementation; able to assist with nutrition/athletic diets; and understands and can effectively administer Pre-participation Physical Exams (PPE's).

Table 3

Skills Analysis: Injury Prevention and Health Promotion   *(Category Ranking = 2, N = 6)*

Item	Mean Rating	ΣRankPoint	Final Rank
Incorporate injury examination with appropriate techniques to prevent injuries	4.67	52	1
Proficient in taping/strapping	4.67	51	2
Educate athletes, parents and coaches regarding injuries before they occur	4.50	50	3
Proficient in protective padding	4.67	44	4

Table 3 (continued)

Item	Mean Rating	ΣRankPoint	Final Rank
Understands the effect of environment on athletic participation	3.83	39	5
……………………………………………………………………………………………..			
Knowledge of nutritional supplementation and regulations regarding supplementation	3.67	27	6
Able to assist with nutrition, athletic diets	3.33	25	7
Understands and can effectively administer Pre-participation Physical Exams (PPE's)	3.17	24	8

The Acute/Emergent Care of Injuries and Illnesses category (Table 4) was the #3 ranked category and had 6 ranked items. The top tier was comprised of CPR/1st Aid certified; be able to use emergency equipment within our scope of practice; and ability to act composed under pressure. The lower tier contained understands emergency management is the most important task of an athletic trainer; knowledge of the creation and criteria for activation of an Emergency Action Plan; and understands the necessity to work well with other emergency personnel.

Table 4

Skills Analysis: Acute/Emergent Care of Injuries and Illnesses   *(Category Ranking = 3, N = 6)*

Item	Mean Rating	ΣRankPoint	Final Rank
CPR/1st Aid certified	4.50	52	1
Be able to use emergency equipment within our scope of practice (AED, vacuum splints)	4.67	50	2
Ability to act composed under pressure	5.00	49	3
……………………………………………………………………………………………..			
Understands emergency management is the most important task of an athletic trainer	4.17	41	4
Knowledge of the creation and criteria for activation of an Emergency Action Plan (EAP)	4.50	40	5
Understands the necessity to work well with other emergency personnel	4.17	38	6

Tables 2 (Clinical Examination), 3 (Injury Prevention) and 4 (Emergent Care) together

comprise a category tier of *On the field* skills. This indicates that hands-on skills need to develop

first in athletic trainers before interpersonal skills and workplace survival skills.

The Interpersonal Communication (Table 5) category was ranked #4 and consisted of 5

items. Item 1 was the first item to have a perfect mean rating in the study. Ability to communicate

with athletes, coaches and parents was alone in the 1st tier of skills. The middle tier contained

understands that trust is built on the ability to communicate with others; ability to communicate

professionally with other allied health professionals; and understands the role of non-verbal

communication. Alone in the bottom tier was understands what is said is not as important as how

it is said.

Table 5

Skills Analysis: Interpersonal Communication Skills   *(Category Ranking = 4, N = 6)*

Item	Mean Rating	ΣRankPoint	Final Rank
Ability to communicate with athletes, coaches and parents	5.00	58	1
Understands that trust is built on the ability to communicate with others	4.33	51	2
Ability to communicate professionally with other allied health professionals	4.33	47	3
Understands the role of non-verbal communication	4.00	44	4
Understands what is said is not as important as how it is said	3.50	36	5

The Administrative Responsibility category (Table 6) was ranked fifth and consisted of

10 items with items 6, 7 and 8 having tied in ΣRankPoints. Item 6 had a higher mean rating than

items 7 and 8, and item 7 had a higher mean rating than item 8. The mean rating was used to

rank-order these three items. Two items made up the top tier, be able to work on their own and delegate when applicable and punctual. Tier two included empathetic to patients/athletes and efficient operation of athletic training room/time management. Ordering of supplies; organize baseline testing of athletes; understands role of documentation as data for public relations and marketing yourself as a professional made up tier three. The bottom tier consisted of understands SOAP note documentation and integrates technology into injury documentation.

Table 6

Skills Analysis: Administrative Responsibility   *(Category Ranking = 5, N = 6)*

Item	Mean Rating	ΣRankPoint	Final Rank
Be able to work on their own and delegate when applicable	4.67	53	1
Punctual	4.67	48	2
....			
Empathetic to patients/athletes	4.50	43	3
Efficient operation of Athletic Training Room/Time Management	4.33	38	4
....			
Ordering of supplies	3.50	28	5
Organize baseline testing of athletes	4.00	27	6
Understands Federal regulations (HIPAA, FERPA)	3.67	27	7
Understands role of documentation as data for public relations and marketing yourself as a professional	3.33	27	8
....			
Understand SOAP note documentation	3.33	22	9
Integrates technology into injury documentation	2.83	17	10

The Workplace Attributes category (Table 7) was #6 entailed 9 items and no ties in ΣRankPoints. There were four tiers in this category with communication sitting alone in the top tier, with a perfect mean rating. Team work/congenial; ability and willingness to learn; and

understand your role within the workplace made a second tier. The third tier was defined by quick

customer service; sense of humor; flexibility in schedule; and desire to excel/be great. Additional

professional qualifications were alone as the bottom tier.

Table 7

Skills Analysis: Workplace Attributes   *(Category Ranking = 6, N = 6)*

Item	Mean Rating	ΣRankPoint	Final Rank
Communication	5.00	58	1
....			
Team work/Congenial	4.50	46	2
Ability and Willingness to learn	4.33	42	3
Understand your role within the workplace	4.33	38	4
....			
Quick customer service	4.17	31	5
Sense of humor	3.50	30	6
Flexibility in schedule	4.00	29	7
Desire to excel/be great	3.83	28	8
....			
Additional professional qualification (teaching certificate, CSCS, etc…) to allow for professional growth	3.83	22	9

The Professional Development (Table 8) category was #7 and consisted of 8 items with

maintenance of necessary licensures and certifications, along with ethical decision-making, in the

top tier. The item with highest mean rating, ethical in giving medical advice; actively promotes

athletic training as a profession; and willingness to "always be a student" were in the second tier.

A third tier was comprised of makes continuing education a priority of their free time and uses

own time and answers to complete CEU requirements. Alone in a bottom tier was involvement in

state and national organizations as a student.

Table 8

Skills Analysis: Professional Development & Responsibility / Commitment to the Profession
(Category Ranking = 7, N = 6)

Item	Mean Rating	ΣRankPoint	Final Rank
Maintenance of necessary licensures and certifications	4.67	50	1
Ethical decision making	4.67	49	2
Ethical in giving medical advice	4.83	44	3
Actively promotes athletic training as a profession	4.50	41	4
Willingness to "always be a student"	4.00	38	5
Makes continuing education a priority of their free time	3.83	33	6
Uses own time and answers to complete CEU requirements	4.00	32	7
Involvement in state and national organizations as a student	3.00	25	8

The Personal Characteristic category (Table 9) was #8 and consisted of 10 items with dependable being alone in the top tier. Honesty and personable made up tier two, while professionalism, organized and communication across all social and occupational levels made up tier three. Tier four contained energetic, patience and positive, with creative separating itself into a bottom tier.

Table 9

Skills Analysis: Personal Characteristic   *(Category Ranking = 8, N = 6)*

Item	Mean Rating	ΣRankPoint	Final Rank
Dependable	4.83	51	1
Honesty	4.50	43	2
Personable	4.50	41	3

52

Table 9 (continued)

………………………………………………………………………………………………

Professionalism	4.67	35	4
Organized	4.33	33	5
Communications with all social, occupational levels of patients	4.17	31	6

………………………………………………………………………………………………

Energetic	4.50	27	7
Patience	4.00	26	8
Positive	4.50	25	9

………………………………………………………………………………………………

Creative	3.33	18	10

Tables 5 (Interpersonal Communications), 6 (Administrative Responsibility), 7 (Workplace Attributes), 8 (Professional Development) and 9 (Personal Characteristics) completed a second tier of categories the researcher would title *Off the Field* skills. These are skills that accentuate patient care, promote the entry-level athletic trainer as a professional, and build confidence in those around them.

The Psychosocial Strategies and Referral category (Table 10) was ninth and spread 5 items over 2 tiers. The top tier encompasses ability to counsel athletes, parents and coaches on how to deal with their injury; communicates to athletes, parents and coaches regarding the significance of injuries that do not have outward physical symptoms; and ability to deal with criticism. The bottom tier includes quick decisions to return to play or refer in stressful environment and seeks regular continuing education to meet the need of patients/athletes.

Table 10

Skills Analysis: Psychosocial Strategies and Referral   *(Category Ranking = 9, N = 6)*

Item	Mean Rating	ΣRankPoint	Final Rank
Ability to counsel athletes, parents and coaches on how to deal with their injury	4.33	53	1

Table 10 (continued)

Communicate to athletes, parents and coaches regarding the significance of injuries that do not have outward physical symptoms	4.17	51	2
Ability to deal with criticism	4.67	50	3
Quick decisions to return to play or refer in stressful environment	3.83	45	4
Seeks regular continuing education to meet the needs of patients/athletes	4.00	41	5

The Quality of Education Experience category (Table 11) was ranked tenth and consisted of 4 items with a tie at the top, which was differentiated using the mean rating score. The top 3 responses made up the top tier, with those responses being attended program where students are allowed extensive "hands-on" experiences; must graduate from accredited program; and attended program that produces a better professional, life-long learner. By itself in the bottom tier is school does not affect desirability to hire.

Table 11

Skills Analysis: Quality of Educational Experience   *(Category Ranking = 10, N = 6)*

Item	Mean Rating	ΣRankPoint	Final Rank
Attended program where students are allowed extensive "hands-on" experiences	4.33	53	1
Must graduate from accredited program	3.67	53	2
Attended program that produces a better professional, life-long learner	3.83	51	3
School does not affect desirability to hire	2.17	47	4

The Business Skills category (Table 12) was #11 and had 6 items, split evenly into tow tiers. The top tier had understands that athletic training is a service industry; understands what it takes to keep a business functional; and understands athletic training is not a revenue generating

business/dependent on outside funding. A bottom tier consisted of understands concepts of budgeting to enhance purchasing; makes practice setting more marketable; and understands profit vs. loss in business. The tie between items 5 and 6 was settled by using the mean rating score for each item.

Table 12

Skills Analysis: Business Skills   *(Category Ranking = 11, N = 6)*

Item	Mean Rating	ΣRankPoint	Final Rank
Understands that athletic training is a service industry	4.33	53	1
Understands what it takes to keep a business functional	3.33	49	2
Understands athletic training is not a revenue generating business/dependent on outside funding	3.33	47	3
Understands concepts of budgeting to enhance purchasing	3.67	41	4
Makes practice setting more marketable	3.00	41	5
Understands profit vs. loss in business	2.83	39	6

The Healthcare Administration (Table 13) ranked #12 and consisted of 7 items. The top tier contained responses leadership/management skills and market their skills to athletes, coaches, parents and doctors. The final 5 items formed a bottom tier of ability to administer a school's athletic health care on their own; uses SOAP note method for documentation of injury tracking and documentation; familiar with various forms of injury documentation systems; understands Federal regulations, such as FERPA and HIPAA; and understands interconnection between health care practitioners and health insurance providers.

Table 13

Skills Analysis: Healthcare Administration   *(Category Ranking = 12, N = 6)*

Item	Mean Rating	ΣRankPoint	Final Rank
Leadership/Management Skills	4.17	52	1
Market their skills to athletes, coaches, parents and doctors	4.17	50	2
Ability to administer a school's athletic health care on their own	3.67	43	3
Uses SOAP note method for documentation of injury tracking and documentation	3.33	42	4
Familiar with various forms of injury documentation systems	3.17	37	5
Understands Federal Regulations (HIPAA, FERPA)	3.50	35	6
Understands interconnection between health care practitioners and health insurance providers	3.17	35	7

The Therapeutic Interventions category (Table 14) was #13 and consisted of 5 items, all in one tier and with a 3-way tie between items 2, 3 and 4. Item 2 stood alone as having a higher mean rating score than both items 3 and 4. Items 3 and 4 both had the same mean rating score so the tie was broken by the fact item 3 was ranked 1st by a panelist while item 4 was not ranked 1st by any panelist.

Table 14

Skills Analysis: Therapeutic Interventions (Modalities, Rehab)   *(Category Ranking = 13, N = 6)*

Item	Mean Rating	ΣRankPoint	Final Rank
Uses to psychosocial strategies to increase rehab adherence and motivation	3.83	49	1
Manages modalities to maximize time constraints of certain practice settings	4.17	48	2

Table 14 (continued)
How and When to use appropriate modalities
(indications/contraindications)
Tie Breaker/This
choice had 1 1ˢᵗ Place Vote   3.83   48   3

Understands Progressive Resistive
Exercises (PRE's)   3.83   48   4

Creative in rehabilitation to prevent
patient/athlete stagnation or boredom   4.17   47   5

The Use of Evidence-Base Medicine in Practice category (Table 15) was ranked last at

#14 and encompassed 6 items, across two tiers. The items in the top tier were be able to keep up

with "latest and greatest" techniques as proven through research; understands accepted way of

practice; be able to discuss current research trends with colleagues and students; and ability to

read, interpret scientific research articles. The last two items made a bottom tier and these were

able to use research to defend techniques and willingness to volunteer for research as a subject or

researcher.

Table 15

Skills Analysis: Use of Evidence-Based Medicine in Practice   *(Category Ranking = 14, N = 6)*

Item	Mean Rating	ΣRankPoint	Final Rank
Be able to keep up with "latest and greatest" techniques as proven through research	3.33	52	1
Understands accepted way of practice	3.83	50	2
Be able to discuss current research trends with colleagues and students	3.00	48	3
Ability to read, interpret scientific research articles	2.50	47	4
Able to use research to defend techniques	2.67	39	5
Willingness to volunteer for research as a subject or researcher	1.67	34	6

Summary and Integration of Findings

According to the ΣRankPoint totals, the six panelists determined Clinical Examination and Diagnosis was the most important category among the 14 skill categories. A top tier of categories is comprised of the first two categories: Clinical and Examination and Diagnosis, along with Injury Prevention and Health Promotion. These two items were decided to be the most important, via panelist ranking, across the selection of researcher-described *On the Field* and *Off the Field* skill categories. On the field skill categories being those skills needed during the course of athletic participation and off the field skills are those that occur during times between athletic endeavors.

Tier two of skill categories was made from the Acute/Emergent, Interpersonal Communications and Administrative Responsibilities categories. None of these three appear to have a connection between them, as one is *On the Field*, one is *Off the Field* and one can be on or off. The panelists disagreed which secondary skill category was most important, but were in agreement that two items, communicates with parents, coaches and athletes and ability to act composed under pressure were the most important secondary skill items. These items were the first items to receive a perfect 5.00 mean rating from the panel.

The third category tier was a tightly packed grouping of items 6 through 12, separated by 9 ΣRankPoints. The categories contained in tier three affect the athletic trainer as an employee and learner, and not as medical practitioner. With the exception of psychosocial strategies, which was seen by the panelists as a third-level medical skill, these categories reflect middle expectations on how to survive in the workplace. Further, only one skill item received a perfect 5.00 mean rating in this tier, and it was once again communication, but in this case it referenced to instances within the workplace.

The bottom tier skill categories, Therapeutic Interventions and use of Evidence-Based Medicine, were ranked the lowest two items by the panel, but had middle of the pack mean

ratings. Looking deeper, none of the skills items were rated higher than 4.17. This may explain why ultimately, when forced to make a ranking choice, these two categories, though being rated somewhat important, still finished last.

Interestingly, the panelists demonstrated that communication extends beyond interpersonal relationships. Communication, as an essential skill, was promoted in Workplace and Personal characteristics, along with Psychosocial Strategies, meaning it appears in the top three tiers of skill categories. This overall awareness of communication as a skill that spans many categories underscores its importance as an essential skill for entry-level athletic trainers.

The Delphi panel's responses answered research question #3 by identifying a few skills missing from the athletic training competencies. Communication, in its many iterations across multiple skill categories and tiers of skill categories, was the most important single skill identified by this panel of experts and is not specifically listed in the Competencies. While written medical documentation, such as SOAP (Subjective-Objective-Assessment-Plan) note are taught as part of the Healthcare Administration competencies, other forms of communication such as verbal, non-verbal and interpersonal written are not specifically listed. Additionally, the study participants would like to see two other similar skills emphasized to young athletic trainers: understanding that trust is built on good communication; and good work habits such as punctuality, empathy and being able to delegate.

Conversion of Results to a Duty-Task List

In an effort to ease interpretation for use in athletic training curricula, the researcher addressed research question #4 by converting the Delphi findings to a Duty Task List (DTL). In this traditional career and technical education curriculum-planning guide, duty is defined as "a cluster of related tasks from a broad work area or general area of competence" (Norton, 1997, Appendix C, p.2). Task is defined as "a work activity that is discrete, observable, performed within a limited period of time and that lead to a product, service or decision. Tasks are also

frequently referred to as the competencies that students must obtain in order to be successful

workers" (Norton, 1997, Appendix C, p.4). For the purpose of the conversion from this Delphi

study to DTL, the researcher followed the procedure used by Ward (2010) and equated Duty to

skill categories and Tasks to individual skills within the categories. This conversion process

represented a convergence of traditional DACUM (Develop a Curriculum) process for creating

industry-validated curriculum with the Delphi research methodology in this study. The DTL

representation of the Delphi research is shown in Figure 1 (Appendix F, p. 101).

CHAPTER V

CONCLUSIONS

Overview of the Study

The purpose of this study was to solicit input from secondary school athletic administrators and athletic trainers to identify and describe the critical competencies experts in the field deem essential to prepare entry-level athletic trainers to join the workplace. This study was specifically focused on completing this purpose in the context of South Louisiana, where a large number of athletic trainers are educated and employed.

This research study will utilize a Delphi technique to gather task analysis data utilizing a mixed-methods design for the gathering, analysis and interpretation of the data. The study used the input of industry experts to identify specific skills essential for entry-level athletic trainers, thus maintaining the industry-validation focus of traditional occupational curriculum development. The six total participants on the Delphi panel consisted of three certified athletic trainers practicing at a secondary school, one athletic trainer who owns and operates a physical therapy clinic that hires athletic trainers, and two private school athletic directors who hire and utilize the services of an athletic trainer. The theoretical framework was based on using both *competency-based education* and learning over time for the purpose of analyzing industry-based skill competencies.

The following research questions directed this study:

1. What skills are identified as essential by the expert panel for entry-level athletic trainers to possess before entering into the workplace

2. How do these essential skills rate, rank and cluster according to the panel of experts?

3. What skills are identified by the panel of experts as missing from the Athletic Training Educational Competencies?

4. For this research, what Duty-Task List (DTL) can be created that will be beneficial to policy makers?

The Delphi technique was used to conduct this research study and gather skill analysis data utilizing a mixed-methods design to gather, analyze and interpret the data. The researcher followed the successful procedures used in other recent Delphi-based industry studies (Brown, 2007; Ward, 2010). Three researcher-created questionnaires were developed for use with the Delphi panel of experts from South Louisiana. Round one used an open-ended questionnaire based on the current 5th Edition (2011) of the Athletic Training Competencies and current athletic training research literature. Rounds two and three used more structured rating and ranking responses to obtain and converge data.

Summary of Findings

The 14 skill categories were divided into four tiers using rating and ranking procedures. Clinical Examination and Diagnosis, along with Injury Prevention and Health Promotion, was indicated by the expert panel as the two skill categories in the most important tier. The most important skill in those categories, incorporate injury examination with appropriate techniques to prevent injuries and understand return to play criteria vs. referral criteria, both touch on the entry-level practitioners' ability to mine for critical information early in the injury process. Proficient in

taping; educating athletes, coaches and parents prior to injury; and utilization of proper techniques to limit liability were all highly ranked in these top-tier skill categories.

The second tier of skill categories consisted of Acute/Emergent Care of Injuries and Illness, Interpersonal Communication Skills, and Administrative Responsibility. Being CPR/1st Aid certified; ability to communicate with athletes, coaches and parents; and be able to work on their own and delegate when applicable were the skills that ranked highest in each category. In what became a reoccurring trend in each tier, a skill category's highest ranked item involved the ability of the entry-level athletic training to speak with the consumer of athletic training services. One item received a perfect rating of 5.00, ability to act composed under pressure, but it only was ranked third in the Acute/Emergent Care category.

The third tier of skill categories was a tightly packed grouping of 7 skills categories. In rank order, workplace-related attributes; professional development & responsibility/commitment to the profession; psychosocial strategies; quality of education experience; business skills; and healthcare administration were the categories chosen by the expert panel in this tier. Communication; leadership/management skills; dependable; ability to counsel athletes, parents and coaches on how to deal with their injury; attended program where students are allowed extensive hands-on experience; understands that athletic training is s service industry; and leadership/management skills were the highest rated items in each of the skill categories. For the third straight tier, communication was the highest ranked item in a skill category. Not only was it tops in the workplace-related attributes category, but it was also given a perfect rating of 5.

A bottom tier of skill categories was made of Therapeutic Interventions and Use of Evidence-Based Medicine. Use of psychosocial strategies to increase rehab adherence and motivation and be able to keep up with "latest and greatest" techniques as shown through research were the highest items in each category but neither received a mean rating higher than

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3.83. In the bottom ranked category, there was no single item with a rating in the 4s and the single lowest rated item in the whole study, willingness to volunteer for research as a subject or researcher, resided in the Evidence-Based category.

Conclusions and Discussion

The findings of this study suggest eight major conclusions:

1. While this panel of professional in South Louisiana gave a clear conceptualization of the essential skills for entry-level athletic trainers, they differed significantly on ranking of the essential skill categories that young athletic trainers need as they enter the workforce.

2. The athletic trainers consistently ranked skills categories from the Competencies higher than non-Competency skill categories, while the athletic administrators ranked non-Competency skill categories as high, and in two instance higher, than Competency-based skills.

3. Communication, in its many iterations across multiple skill categories and tiers of skill categories, was the most important single skill identified by this panel of experts.

4. While skills categories derived from the Competencies held the top three rankings, three of Competency-based skills categories held the bottom three rankings. Conversely, three skill categories from athletic training literature ranked higher than five Competency-based skill categories and none ranked lower than 11th. One possible explanantion could be that the Competencies are ahead of consumer in terms of the perception of what is important in athletic training.

5. There is some incongruence between athletic training traditional training and that needed by athletic training customers.

6. The Delphi method was an effective alternative to face-to-face DACUM procedure in eliciting and converging industry opinion. This supports the conclusion drawn by Brown (2007) and Ward (2010). These three studies collectively support the efficacy of the Delphi as a curriculum development tool.

7. The study produced a Duty Task List (DTL) for educators of entry-level athletic trainers that can serve to improve and refine athletic training curricula.

8. The lowest ranked skill category is this study was use evidence-based medicine in practice, which demonstrates the omnipresent chasm between academic-based athletic trainers and clinical-practice athletic trainers. For many years, internship route athletic trainers have been resistant to the changes they feel are forced upon them by athletic trainers in academic roles. CAATE and the BOC have both pushed for more evidence-based practice in athletic training programs and post-certification continuing education programming. This study's data show that there is still a portion of our clinical membership that is still resistant to change and feel there two types of athletic trainers: those athletic trainers that have hands-on skills and those athletic trainers that can think but cannot do.

Conceptualization of Skills for Entry-Level Athletic Trainers

The Delphi panelists gave a clear, four-tiered picture of what skills are essential for entry-level athletic trainers. The first tier contained two tenants of athletic training practice: injury examination and injury prevention. When people think about what an athletic trainer does, many say, "They tape ankles…", "They give the athletes water…" or "They run on the field when

someone is hurt…".Those casual descriptors were reflected with the Delphi panel in this study, but with more professional description. Being able to examine an injury to determine if the athlete can return to the game; ability to communicate with doctors, athletes, parents and coaches regarding injuries; being a strong taper; and preventing injuries from occurring in the first place were all part of the top tier of skill items.

The second tier of skill items the expert panel would like to see in young athletic trainers were acting cool in emergencies; knowing how to use emergency equipment properly; understanding that trust is built on good communication; and good work habits such as punctuality, empathy and being able to delegate. Many of these second tier skill items are not in the current Competencies for the athletic training profession. This has important implications for athletic training professional curriculum needs and issues.

The third tier skill items were from a mixed bag of competency-based and non-competency based skill categories. Dependability; honesty; teamwork; counseling athletes; parents and coaches on injuries, seen and unseen; hands-on experience in their athletic training program; understanding athletic training is a service industry; and leadership were all items deemed desirable by the expert panel.

In the bottom tier of skill categories were items held very dear in the athletic training profession. Therapeutic Interventions, modalities, are hands-on skills that athletic trainers pride themselves on, and Evidence-Based Medicine has become the big push area in all medical fields over the last decade, athletic training being no different. Skill items such as increasing rehab adherence and knowing what are the newest, fact-based techniques were ranked first in their category, yet both were rated as only moderately important for entry-level athletic trainers.

Delphi as a Task Analysis Alternative to DACUM

Norton (1997) describes the DACUM process as a methodological approach that uses occupational experts to determine the skills and tasks required of individuals in a particular occupation for the following purposes:

> …curriculum development, curriculum review and revision, training needs assessments, competency test development, worker performance evaluation, job descriptions, student recruitment, student counseling, student achievement records, training program review, curriculum articulation, tech prep program development, job modifications and career development and planning (p. 25)

According to Finch and Crunkilton (1989), the presentation and workability of the results of the DACUM process is unique because "a single-sheet skill profile is used to present the skills of an entire occupation, thus reducing the chance of treating one element of an occupation separately from the others" (p. 139). In reality, the DACUM skill profile is usually longer than a single sheet, however, the interrelations among skills remains as an important concept. In current practice, the DACUM product is an industry-supported Duty-Task List (DTL) in which working on-the-job competencies are stated as "tasks", which are listed in related groupings called "duties" (Blank, 1982). The data from the task analysis in this study were pooled into a profile to produce a DTL using the same format used by Brown (2007) and Ward (2010) in their research.

The Delphi method is conceptually similar to DACUM in that the Delphi method can be used for the same purposes as DACUM as well as many other cross-industry program analyses. Adler and Ziglio (1995) described the Delphi Method as "a structured process for collecting and distilling knowledge from a group of experts by means of a series of questionnaires interspersed with controlled opinion feedback" (p. 5). While a DACUM session can be completed face-to-face in two to four days, in many cases it can be difficult for experts to get away from the office for many days at a time. The Delphi method allows the versatility of being administered at distance, which adds a level of anonymity for the experts, increasing openness and easing participation.

Both methods meet requirements for industry-driven task analysis. The intersection of DACUM and Delphi methodology is the 3-round Internet Delphi. This method meets the requirements of CBE and task analysis while increasing participation for industry experts. For those reasons, this method was selected for this study and interwoven into the study's conceptualization.

As shown in other similar studies (Brown, 2007; Ward, 2010), the Delphi methodology proved to be a successful alternative to DACUM in this study. The Delphi method was successful because it accommodated the busy schedules of the athletic trainers and athletic administrators who served on this panel. A two to four day interruption in the panel members' schedules for a DACUM meeting, along with coordinating personal and athletic schedules, was not possible during the academic year. The Delphi method allowed the panel to prepare their submissions on their own time. Despite data collection taking longer than a face-to-face meetings, the Delphi data was complete and thoughtful enough to fulfill the needs of the study and meet outcomes and expectations.

Production of a Duty Task List (DTL)

An instrumental aspect of the task analysis process in competency-based education (CBE) is the development of a Duty Task List (DTL). DACUM is a specialized method that has been traditionally used for developing an occupational analysis and an industry-based DTL for occupationally specific CBE. The DACUM process uses occupation experts to identify skills and tasks required of individuals in a particular occupation for the purpose of "curriculum development, curriculum review and revision, training needs assessment, competency test development, worker performance evaluations, job descriptions, student recruitment, student counseling, student achievement records, training program review, curriculum articulation, tech prep program development, job modifications and career development" (Norton, 1997, p. 25). The DACUM committee functions as a group in face-to-face environments, guided by a trained

facilitator over a period of time from two to four days (Blank, 1982; Finch & Crunkilton, 1989). In current practice, the DACUM product is a DTL in which working on-the-job competencies are stated as *tasks* in groups called *duties* (Blank, 1982).

The DTL generated by this study give a clear picture of duties and tasks that are necessary for entry-level athletic trainers. As with any fully developed DTL, the one that emerged from this study should be useful to further curriculum refinement and in student skill acquisition evaluation. It is the researcher's contention the DTL created from this study's data meets these requirements.

Significance of the Study and Recommendations for Research, Theory and Practice

Significance to Research

Supporting Brown (2007) and Ward (2010), this study's findings further validate the Delphi method as a functional tool to improve educational efficiency in athletic training programs. This study identified skills essential for entry-level athletic trainers. As Evidence-Based Practice (EBP) further permeates both the academic and clinical aspects of athletic training, experts will need to come together to discover what are the best practices in incorporating EBP into their setting. The Delphi method provides an effective and convenient mechanism to further this push to teach and practice according to best practices. The Delphi method was successful because it accommodated the busy schedules of the athletic trainers and athletic administrators who served on this panel. A two to four day interruption in the panel members' schedules for a DACUM meeting, along with coordinating personal and athletic schedules, was not possible during the academic year. The Delphi method allowed the panel to prepare their submissions on their own time. Despite data collection taking longer than a face-to-face meetings, the Delphi data was complete and thoughtful enough to fulfill the needs of the study and meet outcomes and expectations.

The flexibility in both utilization and how participants are selected, gives the Delphi method an advantage over other forms of discovery, such as DACUM. It is this researchers opinion that the results of this study, as with Brown (2007) and Ward (2010), would have looked much different if all the participants had been athletic administrators or vice-versa, and that is why Delphi succeeds in this study. The methodology applied in this study allowed participants with different stakes to fully express themselves anonymously without repercussions, while remaining engaged with fellow participants' input thus painting a complete picture of what is essential knowledge for entry-level athletic trainers.

Recommendations for future research are:

1. Extend this study to other areas of the country.

2. Narrow the scope of the study to success of entry-level athletic trainers in one particular setting (i.e. secondary school, university, professional…)

3. Conduct follow-up interviews with the expert panel to delve deeper into their perceptions of skill requirements for entry-level athletic trainers.

4. Extend this study include personnel who develop or have developed the Competencies.

5. Conduct further investigation into why Therapeutic Intervention and Evidence-Based Medicine ranked at the bottom of skill categories in this study.

6. Use the Delphi methodology to investigate which pre-requisite skills and courses are most beneficial to students applying to enter an athletic training program.

7. Conduct further investigation into the non-Competency based skill categories to see if and how they would be integrated into athletic training curriculums.

8. Construct a database for continuing exploration in the area of athletic training curriculum design.

Significance to Theory

Spady's (1977) original definition of Competency-Based Education (CBE) referred to a set of "explicitly stated and agreed upon learning outcomes that reflect successful functioning in life-roles". In athletic training, these are the Competencies derived solely from the Role Delineation Study. The data from this study shows that while skill categories derived from the Competencies did not always *rank* higher than those non-Competency based skills, the categories from the Competencies still *rated* higher than those outside the Competencies. This suggests that while there are some things the Delphi panel would prefer to see taught to our athletic training students, the things currently being taught are still essential to the functioning of the entry-level athletic trainer. This goes in step with Spady's definition along with Finch and Crunkleton's (1989) description of CBE. Athletic training is skill-based and through this study, skill-based CBE continues to demonstrate itself as the preferable theoretical and philosophical model and instructional delivery method for athletic training preparation.

If the sequence or number of Competencies needed modification, as suggested by the data in this study, future development would become necessary. Staying in lock step with the concept of Learning Over Time, advanced planning will be needed to ensure each skill is given the appropriate emphasis and time to demonstrate competency. Because each of the clinical proficiencies is composed of psychomotor, cognitive, and affective parts broken down into subtasks, thorough examination of how to integrate these via CBE would be necessary. In the future, studies should examine use of the Delphi method to collect information on new Competencies and how they would integrate in current athletic training education through the lens of CBE.

Additional exploration into other educational areas for entry-level athletic trainers should explore both ordinary and specialized knowledge. Time and again, communication was *rated* and

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ranked highly by the Delphi panel. Therefore, further study into the role communication plays in the success of the entry-level athletic trainer along with the role advanced level communication courses play in professional longevity would provide more supporting for adding additional communication-based competencies to athletic training curricula. Exploring the evolving field of Communication Theory for the value of communication should include Lasswell's (1948) *Dance Model*, Kinneavy's (1971) dissection of Aristotle's A Theory of Discourse and Craig's (1999) 7 proposed traditions of understanding communication. Future directions for research of specialized knowledge in athletic training should examine how athletic training educators best integrate communication skills into their programs, best practices for teaching the interpretation and application of research into practice, and how the profession would extract and examine feedback from consumers of athletic training services and how this data could be used to improve athletic training education.

Significance to Practice

For the practicing athletic trainer, a couple of suggestions emerged clearly from the data. The first suggestion for practice is that communication, in all of its many iterations, is crucial to the success of the entry-level athletic trainer. Since most people form their opinions based on previous experiences, it is likely that the study participants had had a bad experience with an athletic trainer over an issue that could have been avoided with appropriate levels of skilled communication.

The second major revelation from the data comes from the varied rating and ranking of certain skills according to the work setting of the participant. Most notably, two tenants of modern athletic training, rehabilitation skills and evidence based practice, were ranked lowest as skill categories. This brings the researcher to the suggestion for practice, and for clinical athletic trainers, program directors of athletic training programs and for the administrative powers that

collect and analyze the data from the Competencies: listen to the customer. The literature is full

of examples from other health professions where the opinion of the customer is taken into

account when constructing educational competencies. This means that clinical athletic trainers

should ask their administrators and patients from time-to-time about the quality of the job they

are doing, and more importantly, what is valued and what is not seen as quite as important in the

athletic training room the athletic trainer is running. For the educator, this suggestion could mean

placing less emphasis on certain medical skills in the curriculum and spending more time

practicing soft-skills like verbal communication, interpersonal relations and written

documentation. Finally, taking into account the wants and needs of the consumer should become

part of the process for completing the next round of education competencies for athletic training.

The researcher is not calling on a complete revamping of the process, but having *de facto* outside

members of the committee charged to create the next edition of the Competencies will add depth

and enhanced practical application for education programs.

The following specific recommendations are made based on the data obtained from this

study and from conclusions drawn during the analysis:

1. Communication, both written and spoken, and in its many forms such as counseling after

   injuries, educating to prevent injuries or creating an injury report for coaches and staff

   was both rated and ranked highly by all members of the expert panel. Communication is

   specifically taught as a skill in the Competencies and reinforced during clinical rotation

   in athletic training education. The data in this study further emphasized the role

   communication was in the top three tiers of skill categories, further demonstrating how

   important communication is in multiple areas of daily athletic training life.

2. The athletic training profession, and especially the accrediting body for athletic training

   education, has placed a high value on increasing Evidence-Based Medicine (EBM) within

   athletic training curriculums. In this study, the panel ranked EBM as its lowest category,

which may suggest that there are still great strides to be made in the profession in terms of encouraging this behavior. While this low ranking may be attributed to the athletic administrators *not caring how athletic trainers get the job done*, the four athletic trainers in the study all ranked EBM in their bottom 5 categories. It was obvious that the panel did not place a high premium on *getting into the literature*. Additionally, clinical athletic trainers should ask themselves what are the legal and ethical ramifications of not staying current with best practices?

3. Therapeutic Interventions, such as rehabilitation and modalities, while a staple of athletic training education and practice, was the second-lowest ranked skill category. Three of the panelist, two athletic trainers and one athletic administrator, ranked it the lowest skill category. All three of those panelists were employed at the secondary school level, where expensive modalities are more of a luxury item than a mandatory fixture, and greater value is placed on intellectual skills such as examination and prevention.

4. The expert panel placed the highest value on three skill categories from the Competencies, but non-Competency skills categories dominated the second and third tiers. Skills not expressly mentioned in the Competencies such as interpersonal communication, personal characteristics, and workplace-related attributes found favor with the panel. Some of these skills are teachable and should have renewed emphasis, but other skills are innate. Those natural skills should be further nurtured in those students who have them, while strategies for correcting students who do not have those characteristics should be developed and then added to curricula.

Conclusion

The need for highly skilled athletic trainers will continue as new employment sectors emerge and issues such as concussion continue to gather public attention. Regular upgrading of

the education competencies has provided students with an ever-increasing level of preparation to enter the work force. However, the literature of athletic training education and the literature of other allied health profession point to other skills not included in athletic training curricula.. With the assistance of a panel of experts, this study reconciled the Competencies with the literature by identifying essential skills for entry-level athletic trainers. Additionally, this study can serve as a guide for educators as they re-examine the current competencies and how they teach and evaluate students.

By combining the principles and DTL production outcome of the DACUM process for curriculum development and the benefits of Delphi methodology, the researcher was able to produce a Duty Task List for use in curriculum examination. The athletic training profession is characterized by frequent interaction with athletes, coaches and parents that all communicate with different style and with different motives. While being a prepared medical practitioner is essential, other personal characteristics and non-Competency skills were deal just as valuable by the panel of experts. This study was successful in demonstrating that while some essential skills are being taught in athletic training curricula, there are other skills that cannot be ignored as part of the educational process.

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APPENDICES

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APPENDIX A

REQUEST FOR PARTICIPATION LETTER

From:	"Randy L. Aldret" rla2471@louisiana.edu
To:	(PARTICIPANT)
Sent:	Monday, February 10, 2014 3:45PM
Attach:	InformedConsent.docx
Subject:	Research Study – Identification of Skills Standards for Entry Level Athletic Trainers in South Louisiana

Dear (PARTICIPANT);

As part of my doctoral program in Education Leadership at Oklahoma State University, I am conducting research to identify skills standards for entry-level Athletic Trainers in South Louisiana. The purpose of this study is to use expert input to identify and describe critical skills or competencies perceived by athletic administrators to be required to train competent Athletic Trainers for work in the secondary school environment. Specifically, this study will focus on fulfilling this purpose in the context of South Louisiana, where a significant number of athletic training professionals are educated and employed. Because of your experience and expertise, you are being invited to be a participant in this research study in the capacity of expert in athletic administration or athletic training. I am in need of participants that have and have not hired an Athletic Trainer previously and those participants that currently act as an Athletic Trainer full-time (more than 20 hours/week) at their school.

I will be conducting a Delphi study, which utilizes a panel of experts to anonymously come to consensus on the topic at hand. You will be asked to respond to a series of three questionnaires via electronic mail and online database. The first of the questionnaires is included in this email, with the second and third to follow after analysis of the previous questionnaire. All participants will remain anonymous and all responses will be held in strict confidence.

Please read carefully the attached Consent Information Sheet. Then, if you are willing to participate in this research study, retain the Consent Sheet for your records and call me at 918-808-4394 or email me at rla2471@louisiana.edu to give me your consent and join the Delphi expert panel. You will be provided copies of the results upon completion of this research study. If you have any questions or problems, please contact me. I look forward to working with you in this unique research project.

Sincerely,

Randy L. Aldret, MS, ATC, LAT
Doctoral Candidate
Oklahoma State University

APPENDIX B

PARTICIPANT CONSENT FORM

Identification of Skills Standards for Entry Level

Athletic Trainers in South Louisiana

Consent Information Sheet

The purpose of this study is to use expert input to identify and describe critical skills or competencies perceived by athletic administrators to be required to train competent Athletic Trainers for work in the secondary school environment. Specifically, this study will focus on fulfilling this purpose in the context of South Louisiana, where a significant number of athletic trainers are educated and employed. Because of your experience and expertise, you are invited to be a participant in this research study in the capacity of expert in athletic administration.

Through your participation in this study, you will help universities to better understand how to plan and deliver education to students preparing to enter into the sports medicine field. If you consent to participate in this study, your name will not be associated with this research in any way. It is very important that you realize that:

1. Your participation in this study is completely voluntary. There are no special incentives for your participation and there are no negative consequences for declining participation.

2. You are free to withdraw your consent to participate in this study at any time.

3. Your involvement in this project will involve completing electronically via email three (3) questionnaires that may require total of about 1-2 hours of your time. The questionnaires will require you to identify, rate and rank skills essential for entry-level athletic trainers.

4. It is not anticipated that you will suffer any risks of discomfort or inconvenience from participation in this research beyond those encountered in daily life.

5. The amount of personal information will be kept to the absolute minimum. All information you provide on the questionnaires will be, and treated with, complete confidentially. No one but the researcher will ever see or know your name or identity. Your name on the returned questionnaires will be immediately replaced by an ID number.

6. All information you provide will be secured at all times by the researcher in a locked cabinet in her personal residence. All hard copies of returned questionnaires will be destroyed after the data being analyzed and copied to a password secured external storage device. Data will be destroyed within three months of completion of the study.

7. The data from this research will be used only for research reporting and curriculum development. Any data used in presentation or publication of professional literature and reports will be anonymous and reported only in aggregated and/in codes. No reference to your name or personal identity will be made at any time. Data collected will be destroyed with three months of conclusion of research.

8. All records of this research will be kept solely by the researcher and will be maintained under locked security until destroyed as described above.

To give your consent to participate in this research, please keep this consent information for your personal use and contact the researcher via email (rla2471@louisiana.edu) or phone (918-808-4394) to receive instructions and begin your participation.

If you have any questions about this research, you may contact Randy Aldret, who is the researcher and doctoral student at Oklahoma State University, at (918) 808-4394 or Dr. Ed Harris, the faculty advisor for the study, at (405) 744-8322. If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Oklahoma State University, Stillwater, OK 74078, (405) 744-3377 or irb@okstate.edu.

APPENDIX C

ROUND ONE QUESTIONNAIRE

SKILLS ASSESSMENT FOR ENTRY LEVEL ATHLETICS TRAINERS IN SOUTH LOUISIANA: A DELPHI STUDY

Randy L. Aldret, MS, ATC, LAT

INPUT FORM: ROUND 1

Your Name _____

ATTENTION: <u>We will ONLY use your name to verify your participation</u>. All input from subjects will be completely confidential.

For this Delphi study, please focus on identifying skills necessary for entry-level athletic trainers. The quality of your input influences the quality of the study. Please avoid generalizations; give specific skills indicative of competency.

List the specific skills you look for as an employer underneath the categories listed below. The categories listed are there to supplement your assessment, but it is not a complete list. If you have responses that do not fit a particular category, please list it under Comments.

Category 1: Use of Evidence-Based Medicine in Practice

Category 2: Injury Prevention and Health Promotion

Category 3: Administrative Responsibility

Category 4: Clinical Examination and Diagnosis

Category 5: Quality of Educational Experience

Category 6: Acute/Emergent Care of Injuries and Illnesses

Category 7: Personal Characteristics

Category 8: Therapeutic Interventions (Modalities, Rehab)

Category 9: Workplace-Related Attributes

Category 10: Psychosocial Strategies and Referral

Category 11: Business Skills

Category 12: Healthcare Administration

Category 13: Professional Development & Responsibility/Commitment to the Profession

Category 14: Interpersonal Communication Skills

APPENDIX D

ROUND TWO QUESTIONNAIRE

SKILLS ASSESSMENT FOR ENTRY LEVEL ATHLETICS TRAINERS IN SOUTH LOUISIANA: A DELPHI STUDY

Randy L. Aldret, MS, LAT, ATC

FEEDBACK FORM: ROUND 1 AND INPUT FORM: ROUND 2

Your Name _____

NOTE: Please be assured we will use your name ONLY to verify your participation. All input revealed to panelists in the Delphi rounds will be completely confidential.

This round of our Delphi will require you to analyze and evaluate the comments made by the Delphi panel in round 1. After your thoughtful analysis, you will then make some choices from among the numerous ideas offered in Round 1 and rank order and rate your selections.

To make your Round 2 input, you should carefully study the feedback from Round 1. This is in the form of a list that summarizes the many responses you and the other panelists offered as quality indicators.

First, rate the categories and then items within the category using the following scale:

1 – not important

2 – somewhat important

3 – moderately important

4 – important

5 – very important

You MAY NOT introduce any new ideas at this point! However, you are encouraged to make comments to explain answers.

Second, rank order the categories and the items within the category in descending order, with your first choice listed as rank 1 and your *nth* choice listed as rank *n*.

Category Number and Title

Round 2:

This category's *Rating* for Importance (1 – 5) (panelist provides)   _____

This category's *Ranking* for Importance (1 – 14) (panelist provides)   _____

Item Number and Name (numbers **do not** imply rank order)	Frequency Listed by Panel (f) in Round 1	Item Rating for Importance within Category	Item Ranking for Importance within Category
1 **RESEARCHER**	**RESEARCHER**	**PANELIST**	**PANELIST**
2 **PROVIDES**	**PROVIDES**	**PROVIDES**	**PROVIDES**
3 **THIS**	**THIS**	**THIS**	**THIS**
4 **INFORMATION**	**INFORMATION**	**INFORMATION**	**INFORMATION**
5			
6			
7			
8			
9			
10			

Comments:

APPENDIX E

ROUND THREE QUESTIONNAIRE

SKILLS ASSESSMENT FOR ENTRY LEVEL ATHLETICS TRAINERS IN SOUTH LOUISIANA: A DELPHI STUDY

Randy L. Aldret, MS, LAT, ATC

FEEDBACK FROM ROUND 2 AND INPUT FORM: ROUND 3

Your Name _____

NOTE: Please be assured we will use your name ONLY to verify your participation. All input revealed to panelists in the Delphi rounds will be completely confidential.

This is the final round of the study. In Round 2, you and your fellow panelists rated and ranked recommendations for educators from the list generated by the panel. For each category a mean (average) rating of importance was calculated. Also calculated was a total of the category's rankings (ΣRank) and its overall group ranking based on this total.

The tables below also show the panel's top ten (10) item selections in each category. The items were selected by assigning "rank points" to each item as follows:

Rank 1 = 10 points

Rank 2 = 9 points

Rank 3 = 8 points

Rank 4 = 7 points

Rank 5 = 6 points

Rank 6 = 5 points

Rank 7 = 4 points

Rank 8 = 3 points

Rank 9 = 2 points

Rank 10 = 1 point

The rank points earned by each item were summed, to compute a score called "sigma rank points" or ΣRankPoint. Also tabulated was the number of times each item was ranked 10 or above by a panelist regardless of ranking assigned, which was designated as the "frequency" (f) score for the item.

Based on their ΣRankPoint scores, the items in each category were ranked from high to low and assigned item numbers corresponding to the rankings of their scores. Thus, item number 1 became the item with the highest ΣRankPoint score and the highest (#1) rank order. Items ranked below 10 eliminated from further analysis in this Delphi study.

The tables below show the Round 2 results, including category and item rankings, _Rank and ΣRankPoint scores, and frequencies (f) for the items retained for further consideration in Round 3.

To make your input for Round 3, study the results of Round 2 carefully. You may decide to not make any changes from your Round 2 submission or, for the final time, rate the categories and the items within each category using the following scale:

1 – not important

2 – somewhat important

3 – moderately important

4 – important

5 – very important

Also, you may rank order the categories and the items with each category in descending order, with your first choice listed as rank 1 and your *nth* choice listed as rank *n*. Do NOT assign any tied ranks.

Category Number and Title

Round 2 Mean Importance Rating = (Researcher provides)

Round 2 Ranking Score (ΣRank) = (Researcher provides)

Round 2 Overall Ranking = (Researcher provides)

Round 3:

This category's *Rating* for Importance (1 – 5) (panelist provides)   _____

This category's *Ranking* for Importance (1 – 14) (panelist provides)   _____

Category and Round 2 Overall Rank	Round 2 ΣRank Point	Round 2 Mean Rating for Importance	Round 3 Importance Rating (1-5)	Round 3 Ranking (1-10)
1 **Researcher Provides**	**This**	**Information**	**PANELIST PROVIDES**	**PANELIST PROVIDES**
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

Comments:

APPENDIX F

FIGURE 1. DUTY TASK LIST (DTL)

DERIVED FROM THE DELPHI METHODOLOGY

DUTIES	TASKS				
CLINICAL EXAMINATION AND DIAGNOSIS	Understands return to play criteria vs. referral criteria **1**	Uses proper techniques to minimize professional liability **2**	Ability to relay critical information to physician **3**	Ability to determine differential diagnoses **4**	How to complete a full and thorough exam **5**
INJURY PREVENTION AND HEALTH PROMOTION	Incorporate injury examination with appropriate techniques to prevent injuries **1**	Proficient in taping/ strapping **2**	Educate athletes, parents and coaches regarding injuries before they occur **3**	Proficient in protective padding **4**	Understands the effect of environment on athletic participation **5**
ACUTE/ EMERGENT CARE OF INJURIES AND ILLNESSES	CPR/1st Aid certified **1**	Be able to use emergency equipment within our scope of practice (AED, vacuum splints) **2**	Ability to act composed under pressure **3**	Understands emergency management is the most important task of an athletic trainer **4**	Knowledge of the creation and criteria for activation of an Emergency Action Plan (EAP) **5**
INTERPERSONAL COMMUNICATION SKILLS	Ability to communicate with athletes, coaches and parents **1**	Understands that trust is built on the ability to communicate with others **2**	Ability to communicate professionally with other allied health professionals **3**	Understands the role of non-verbal communication **4**	Understands what is said is not as important as how it is said **5**
ADMINISTRATIVE RESPONSIBILITY	Be able to work on their own and delegate when applicable **1**	Punctual **2**	Empathetic to patients/athletes **3**	Efficient operation of Athletic Training Room/Time Management **4**	Ordering of supplies **5**
WORKPLACE-RELATED ATTRIBUTES	Communication **1**	Team work/Congenial **2**	Ability and Willingness to learn **3**	Understand your role within the workplace **4**	Quick customer service **5**
PROFESSIONAL DEVELOPMENT & RESPONSIBILITY / COMMITMENT TO THE PROFESSION	Maintenance of necessary licensures and certifications **1**	Ethical decision making **2**	Ethical in giving medical advice **3**	Actively promotes athletic training as a profession **4**	Willingness to "always be a student" **5**
DUTIES	TASKS				

Figure 1. Duty Task List (DTL) derived from the study's Delphi methodology

DUTIES	TASKS				
CLINICAL EXAMINATION AND DIAGNOSIS	Commitment to practice examination skills **6**	Using physicians to increase examination competency **7**	Proper note taking during examination **8**		
INJURY PREVENTION AND HEALTH PROMOTION	Knowledge of nutritional supplementation and regulations regarding supplementation **6**	Able to assist with nutrition, athletic diets **7**	Understands and can effectively administer Pre-participation Physical Exams (PPE's) **8**		
ACUTE/EMERGENT CARE OF INJURIES AND ILLNESSES	Understands the necessity to work well with other emergency personnel **6**				
INTERPERSONAL COMMUNICATION SKILLS					
ADMINISTRATIVE RESPONSIBILITY	Organize baseline testing of athletes **6**	Understands Federal regulations (HIPAA, FERPA) **7**	Understands role of documentation as data for public relations and marketing yourself as a professional **8**	Understands of SOAP note documentation **9**	Integrates technology into injury documentation **10**
WORKPLACE-RELATED ATTRIBUTES	Sense of humor **6**	Flexibility in schedule **7**	Desire to excel/be great **8**	Additional professional qualification (teaching certificate, CSCS, etc…) to allow for professional growth **9**	
PROFESSIONAL DEVELOPMENT & RESPONSIBILITY / COMMITMENT TO THE PROFESSION	Makes continuing education a priority of their free time **6**	Uses own time and answers to complete CEU requirements **7**	Involvement in state and national organizations as a student **8**		
DUTIES	**TASKS**				

Figure 1. Duty Task List (DTL) derived from the study's Delphi methodology

DUTIES	TASKS				
PERSONAL CHARACTERISTICS	Dependable **1**	Honesty **2**	Personable **3**	Professionalism **4**	Organized **5**
PSYCHOSOCIAL STRATEGIES AND REFERRAL	Ability to counsel athletes, parents and coaches on how to deal with their injury **1**	Communicate to athletes, parents and coaches regarding the significance of injuries that do not have outward physical symptoms **2**	Ability to deal with criticism **3**	Quick decisions to return to play or refer in stressful environment **4**	Seeks regular continuing education to meet the needs of patients/ athletes **5**
QUALITY OF EDUCATIONAL EXPERIENCE	Attended program where students are allowed extensive "hands-on" experiences **1**	Must graduate from accredited program **2**	Attended program that produces a better professional, life-long learner **3**	School does not affect desirability to hire **4**	
BUSINESS SKILLS	Understands that Athletic Training is a service industry **1**	Understands what it takes to keep a business functional **2**	Understands athletic training is not a revenue generating business/dependent on outside funding **3**	Understands concepts of budgeting to enhance purchasing **4**	Makes practice setting more marketable **5**
HEALTHCARE ADMINISTRATION	Leadership/ Management Skills **1**	Market their skills to athletes, coaches, parents and doctors **2**	Ability to administer a school's athletic healthcare on their own **3**	Uses SOAP note method for documentation of injury tracking and documentation **4**	Familiar with various forms of injury document systems **5**
THERAPEUTIC INTERVENTIONS (MODALITIES, REHAB, ETC…)	Uses to psychosocial strategies to increase rehab adherence and motivation **1**	Manages modalities to maximize time constraints of certain practice settings **2**	How and When to use appropriate modalities (indications/ contraindication) **3**	Understands Progressive Resistive Exercises (PRE's) **4**	Creative in rehabilitation to prevent patient/ athlete stagnation or boredom **5**
USE OF EVIDENCE-BASED MEDICINE IN PRACTICE	Be able to keep up with "latest and greatest" techniques as proven through research **1**	Understands accepted way of practice **2**	Be able to discuss current research trends with colleagues and students **3**	Ability to read, interpret scientific research article **4**	Able to use research to defend techniques **5**
DUTIES	TASKS				

Figure 1. Duty Task List (DTL) derived from the study's Delphi methodology

DUTIES	TASKS				
PERSONAL CHARACTERISTICS	Communications with all social, occupational levels **6**	Energetic **7**	Patience **8**	Positive **9**	Creative **10**
PSYCHOSOCIAL STRATEGIES AND REFERRAL					
QUALITY OF EDUCATIONAL EXPERIENCE					
BUSINESS SKILLS	Understands profit vs. loss in business **6**				
HEALTHCARE ADMINISTRATION	Understands Federal Regulations (HIPAA, FERPA) **6**	Understands interconnection between health care practitioners and health insurance providers **7**			
THERAPEUTIC INTERVENTIONS (MODALITIES, REHAB, ETC…)					
USE OF EVIDENCE-BASED MEDICINE IN PRACTICE	Willingness to volunteer for research as a subject or researcher **6**				
DUTIES	TASKS				

Figure 1. Duty Task List (DTL) derived from the study's Delphi methodology

APPENDIX G

IRB APPROVAL FORM

Oklahoma State University Institutional Review Board

Date: Wednesday, February 05, 2014

IRB Application No   ED148

Proposal Title: Skills Assessment for Entry Level Athletic Trainers in South Louisiana: A
                                   Delphi Study

Reviewed and   Exempt
Processed as:

Status Recommended by Reviewer(s): Approved   Protocol Expires: 2/4/2017

Principal
Investigator(s):

Randy Aldret   Edward Harris
100 Deer Creek Dr   308 Willard
Lafayette, LA 70506   Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the
rights and welfare of individuals who may be asked to participate in this study will be respected, and that
the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45
CFR 46.

☐ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval
   stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

   1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be
submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may
include changes to the title, PI advisor, funding status or sponsor, subject population composition or size,
recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms
   2. Submit a request for continuation if the study extends beyond the approval period. This continuation must
receive IRB review and approval before the research can continue.
   3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and
impact the subjects during the course of the research; and
   4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the
authority to inspect research records associated with this protocol at any time. If you have questions about the
IRB procedures or need any assistance from the Board, please contact Dawnett Watkins 219 Cordell North
(phone: 405-744-5700, dawnett.watkins@okstate.edu).

Sincerely,

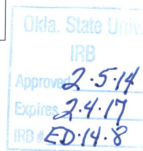Shelia Kennison, Chair
Institutional Review Board

Identification of Skills Standards for Entry Level Athletic Trainers in South Louisiana

Consent Information Sheet

The purpose of this study is to use expert input to identify and describe critical skills or competencies perceived by athletic administrators to be required to train competent Athletic Trainers for work in the secondary school environment. Specifically, this study will focus on fulfilling this purpose in the context of South Louisiana, where a significant number of athletic trainers are educated and employed. Because of your experience and expertise, you are invited to be a participant in this research study in the capacity of expert in athletic administration.

Through your participation in this study, you will help universities to better understand how to plan and deliver education to students preparing to enter into the sports medicine field. If you consent to participate in this study, your name will not be associated with this research in any way. It is very important that you realize that:

1. Your participation in this study is completely voluntary. There are no special incentives for your participation and there are no negative consequences for declining participation.

2. You are free to withdraw your consent to participate in this study at any time.

3. Your involvement in this project will involve completing electronically via email three (3) questionnaires that may require total of about 8-10 hours of your time. The questionnaires will require you to identify, rate and rank skills essential for entry-level athletic trainers.

4. It is not anticipated that you will suffer any risks of discomfort or inconvenience from participation in this research beyond those encountered in daily life.

5. The amount of personal information will be kept to the absolute minimum. All information you provide on the questionnaires will be, and treated with, complete confidentially. No one but the researcher will ever see or know your name or identity. Your name on the returned questionnaires will be immediately replaced by an ID number.

6. All information you provide will be secured at all times by the researcher in a locked cabinet in her personal residence. All hard copies of returned questionnaires will be destroyed after the data being analyzed and copied to a password secured external storage device. Data will be destroyed within three months of completion of the study.

7. The data from this research will be used only for research reporting and curriculum development. Any data used in presentation or publication of professional literature and reports will be anonymous and reported only in aggregated and/in codes. No reference to your name or personal identity will be made at any time. Data collected will be destroyed with three months of conclusion of research.

8. All records of this research will be kept solely by the researcher and will be maintained under locked security until destroyed as described above.

To give your consent to participate in this research, please keep this consent information for your personal use and contact the researcher via email (rla2471@louisiana.edu) or phone (918-808-4394) to receive instructions and begin your participation.

If you have any questions about this research, you may contact Randy Aldret, who is the researcher and doctoral student at Oklahoma State University, at (918) 808-4394 or Dr. Ed Harris, the faculty advisor for the study, at (405) 744-8322. If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Oklahoma State University, Stillwater, OK 74078, (405) 744-3377 or irb@okstate.edu.

VITA

Randy Lee Aldret

Candidate for the Degree of

Doctor of Education

Thesis: SKILLS ASSESSMENT FOR ENTRY LEVEL ATHLETIC TRAINERS IN
          SOUTH LOUISIANA: A DELPHI STUDY

Major Field: School Administration

Biographical:

   Education:

   Completed the requirements for the Doctor of Philosophy/Education in your
   major at Oklahoma State University, Stillwater, Oklahoma in July, 2014.

   Completed the requirements for the Master of Science in Health Promotion at
   the University of Oklahoma, Norman, OK in 2003.

   Completed the requirements for the Bachelor of Science in Kinesiology at
   Louisiana State University, Baton Rouge, LA in 1997.

   Experience:

   Clinical Education Coordinator/Instructor/Adjunct Athletic Trainer
   University of Louisiana, Lafayette, LA   (2012-Present)
   Athletic Trainer/Instructor
   Radford University, Radford, VA   (2011-2012)
   Adjunct Faculty/Clinical Instructor/Preceptor
   University of Tulsa Athletic Training Program   (2008-2011)
   Head Athletic Trainer
   Cascia Hall Preparatory School, Tulsa, OK   (2004-2011)
   Head Athletic Trainer
   Casady School, Oklahoma City, OK   (2000-2004)

   Professional Memberships:

   Louisiana Athletic Trainers Association   (1994-1999, 2012-Present)
   National Athletic Trainers Association   (1997-Present)
   Oklahoma Athletic Trainers Association   (1998-Present)
   Virginia Athletic Trainers Association   (2012-Present)