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Educational backgrounds and teaching styles of athletic training educators in entry-level CAAHEP accredited athletic training programs

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Educational Backgrounds and Teaching Styles of
Athletic Training Educators in Entry-Level
CAAHEP Accredited Athletic Training Programs

Valerie J. Rich

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
Interdisciplinary Education
College of Education
University of South Florida

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*This dissertation is dedicated to Brinda Barnett, my mother, my best friend, my
inspiration.*

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Educational Backgrounds and Teaching Styles of Athletic
Training Educators in Entry-Level CAAHEP Accredited Athletic
Training Education Programs

Valerie Rich

ABSTRACT

The purpose of this study was to describe the educational backgrounds and teaching styles of athletic training educators and to see if a relationship existed between educational backgrounds and teaching styles. An electronic survey was e-mailed to 338 Program Directors of CAAHEP accredited undergraduate and graduate athletic training education programs. The survey was also posted on the athletic training educator's listserv to recruit more participants. The survey contained questions regarding demographics and educational history, as well as the Teaching Styles Inventory (Grasha, 2002). A total of 198 athletic training educators responded to the survey, and 174 filled out the survey in its entirety.

An overwhelming majority of the participants were White (98%) and about 50% were male or female. Over half of the participants were program directors (59%) and 38% were at the assistant professor rank. Thirty-one percent were currently employed at a liberal arts institution. Most were employed in a College of Education (36%), working in a department of health, physical education, and recreation (25%).

These athletic training educators had diverse educational backgrounds. A Bachelor of Science degree had been awarded to 78% of the respondents, and 33% of the

Bachelor's degrees were in physical education. Forty-five percent did not have a minor degree. At the master's level, most of the degrees that had been awarded were Master's of Science (63%) and 23% were in athletic training/sports medicine. Most of the participants did not hold a post-graduate level degree (37%). Of those with a post-graduate degree, 27% held a Doctorate of Philosophy. Nine percent were in curriculum and instruction. On average, athletic training educators had been teaching for 8 years, had completed 8 courses in pedagogy, and had attended 8 workshops that were based on improving pedagogical practices.

The predominant teaching style among athletic training educators was personal model (50%). Surprisingly, none of the participants had a delegator teaching style as their predominant style. The results of the MANOVA suggested that a significant relationship did not exist between educational backgrounds and teaching styles among these athletic training educators.

Chapter One

Introduction

Statement of the Problem

Athletic training education has rapidly changed over the past few decades. In the early years of the profession, athletic training began within physical education programs as a minor or concentration supplemented with internship hours. Entry-level athletic training education has since evolved as an undergraduate or graduate major (Hertel, West, Buckley, & Denegar, 2001). As a result of recent educational reform, the development of accredited programs has been encouraged and the internship route to certification was eliminated (Delforge & Behnke, 1999). The shift in education from an internship, hour-based program to a curriculum, competency-based program has created a need for more university level educators in the profession. The accreditation process for athletic training education programs, the need for higher education policy reform in athletic training education, and the emphasis on research in athletic training have also led to an increased need for doctoral-educated certified athletic trainers (Hertel, et al., 2001). These individuals are needed to fill the full-time tenure-track positions in academic settings.

Athletic training educators possess varying backgrounds in pedagogy; some educators possess a degree in pedagogy, while others may have had only a few courses or attended a few educational conferences or workshops. Additionally, the level of degree

attainment by athletic training educators varies. In some athletic training education programs, athletic trainers holding a Master's degree instruct courses. However, little research exists regarding the educational histories of athletic training educators. Hertel et al. (2001) surveyed 116 doctoral-educated Certified Athletic Trainers about their educational histories. The results showed that 49% of the certified athletic trainers at this level received a doctoral degree in the exercise science discipline, 27% received degrees in health and physical education, while 24% received a degree in education and/or administration. Due to the variety in educational backgrounds, it is not uncommon to find athletic trainers teaching in athletic training programs because they are deemed to be content experts. Recent discussion in the athletic training profession, as well as in other health care professions, questions whether being a content expert is enough. Hertel et al. (2001) identifies the need to "train the next generation of athletic training educators" (p. 55). Data from this study suggest that doctoral-educated athletic trainers should have sufficient practice and training in pedagogy. At this point, it is unclear whether a pedagogy background makes a difference in teaching style or instructional effectiveness.

Several researchers have noted that in order to be effective educators within an athletic training program, the instructors must understand the learning styles of the athletic training students (Brower, Stemmans, Ingersoll, & Langley, 2001; Peer & McClendon, 2002; Stradley, Buckley, Kaminski, Horodyski, Fleming, & Janelle, 2002). Understanding students' learning styles will allow the instructor to incorporate an appropriate teaching strategy. Some research suggests that teaching to a specific learning style is beneficial to the student (Stradley et al., 2002). Harrelson, Leaver-Dunn, and Martin (2000) believe that there is a strong connection to an individual's learning style

and his/her teaching style preference. Harrelson et al. (2000) suggest that athletic training educators should be aware of his/her learning style so that a wide variety of instructional strategies appealing to other learning styles are used in the classroom. However, since much of the focus has been on learning styles, little research has been conducted on teaching styles of athletic training educators.

Teaching is a multidimensional, complex construct that is influenced by anyone involved in either the teaching or learning process (Theall, 1999). The teacher-student relationship within the classroom is a highly dynamic interaction, in which further understanding of teaching styles is warranted. Most of the literature has focused on learning styles, which provides only half of the picture. Historically, most teachers end up teaching the way they were taught (Crews, Stitt-Gohdes, & McCannon, 2000). According to Richlin and Cox (1994), “even with the new interest in teaching during the past decade, most professors remain *bricoleurs*, learning to teach by trial-and-error” (p. 3). The personal qualities of educators that evolve into teaching styles need to be explored to fully depict the interaction between the teacher and student (Grasha, 1994).

Educators often use a potpourri of instructional methods simply because the features of using these methods are appealing. Often, that particular individual has no clear understanding of how that method fits into the overall conceptual framework of how individuals learn (Grasha & Yangarber-Hicks, 2000). Grasha (1994) believes that “a teaching style represented a pattern of needs, beliefs, and behaviors that faculty displayed in their classroom” (p. 142). In the past, researchers have attempted to classify or categorize these different behavior and belief systems into teaching styles or perspectives. Assessing teaching styles provides educators with insight on the learning environment.

Reflecting on current teaching practices may also allow educators to make better decisions about incorporating specific instructional strategies that fit into the overall conceptual framework (Grasha & Yangarber-Hicks, 2000). In addition, understanding one's teaching style may provide insight on how to improve one's teaching (Conti, 1983).

Theoretical Framework

Early teacher education primarily focused on gaining expertise in a particular content area. "What people forget is that expertise in teaching, as in anything else, involves domain specific knowledge" (Grasha & Yangarber-Hicks, 2000, p.3). However, research has shifted the focus from gaining content expertise to including adequate pedagogical knowledge (Cochran, DeRuiter, & King, 1993). Both are considered important for a teacher to be effective. Shulman (1986) describes pedagogical content knowledge as a union of subject matter expertise with pedagogical knowledge. It has been thought that this merging of knowledge plays a significant role in the teachers' ability to understand a subject matter, teach and manage learning, and facilitate relationships with the learner (Cochran et al., 1993; Entwistle & Walker, 2000; Ormrod & Cole, 1996).

This particular theory of pedagogical content knowledge is also discussed in the medical education literature. Medical and allied health professionals often undergo lengthy training in a specific content area in order to achieve competency in the profession. Most of these individuals do not receive any formal training in education, but end up teaching either in a classroom or clinical setting (Pasquale & Pugnaire, 2002). There is an underlying assumption that expertise in the field translates into the ability to teach (McLeod, Steinert, Meagher, & McLeod, 2003). As a result, some medical and

allied health professions are choosing to provide opportunities for individuals to understand better curriculum planning, assessment methods, learning styles, instructional strategies, and teaching styles (Bligh, 2001; Pasquale & Pugnaire, 2002).

Several studies support the contention that most instructors tend to develop teaching styles based upon previous experiences as a student (Crews et al., 2000; Harrelson et al., 2000; Schaefer & Zygmunt, 2003). Educators often use specific instructional strategies because they are appealing. Frequently, that particular individual has no clear understanding of how that method fits into the overall conceptual framework of how individuals learn (Grasha & Yangarber-Hicks, 2000). Heimlich and Norland (2002) state that teaching styles are merely the relationship between teaching beliefs and behaviors. In the past, researchers have attempted to classify or categorize these different behaviors and belief systems into teaching styles or perspectives. Grasha (1994) describes five different teaching styles, which are expert, formal authority, personal model, facilitator, and delegator. Reinsmith (1994) describes teaching styles on a continuum from being teacher-centered to student-centered, in which nine different sub-styles are identified. Conti (1979) describes teaching styles on a similar continuum. Mosston and Ashworth (1990) identify 11 different teaching styles on a spectrum based on the interaction between the teacher and the student, as well as the subject matter and behavior objectives. Understanding one's own teaching style will facilitate instructional effectiveness in addition to arriving at a deeper understanding of the type of individual one wants to be in the classroom (Heimlich & Norland, 2002).

Purpose of the Study

A significant gap in the literature exists examining the educational backgrounds of athletic training educators. In addition, another gap exists examining the teaching styles of athletic training educators. Thus far, the focus of the athletic training literature has been on learning styles and instructional strategies perceived to enhance classroom instruction. In a comprehensive overview of athletic training education research, Turocy (2002) found that the focus of these publications was on student learning styles, facilitating learning and critical thinking skills, using technology for instruction, clinical instruction and supervision, success on the Board of Certification (BOC) examination, program administration, and continuing education of certified athletic trainers. Research on pedagogical knowledge or teaching styles of athletic trainers was not evident. Therefore, the purpose of this study was to identify and describe the educational backgrounds and teaching styles of athletic training educators.

Research Questions

The following research questions were addressed in this study:

- a) What is the educational background of athletic training educators? This research question was answered by obtaining information on the following variables:
 - Major/Minor in Undergraduate, Graduate, and Postgraduate Degree,
 - Number of years of teaching experience,
 - Number of courses taken in education/pedagogy, and
 - Number of workshops or educational sessions attended that focus on pedagogical practices, improving teaching practices, or address other pedagogical issues.

b) What teaching styles are predominant among athletic training educators? This research question was measured by using the Teaching Styles Inventory as developed by Grasha (2002). Teaching styles are categorized as follows:

- Expert,
- Formal authority,
- Personal model,
- Facilitator, and
- Delegator.

c) What is the relationship between educational background and teaching styles among athletic training educators? Relationships were explored between the predominant teaching style and the following variables:

- Major/Minor in Undergraduate, Graduate, and Postgraduate Degree,
- Number of years of teaching experience,
- Number of courses taken in education/pedagogy, and
- Number of workshops or educational sessions attended that focus on pedagogical practices, improving teaching practices, or address other pedagogical issues.

Hypothesis

Null Hypothesis: There is no relationship between teaching styles and educational backgrounds among athletic training educators.

Alternative Hypothesis: There is a relationship between teaching styles and educational backgrounds among athletic training educators.

Significance of the Study

Few studies exist in the athletic training literature that describe the educational backgrounds or teaching styles of athletic training educators. Specific learning styles of athletic training students have been reported in the literature, but the predominant teaching styles of athletic training educators is unknown. The present research aimed to descriptively depict the educational backgrounds of athletic training educators and attempted to identify common teaching styles among athletic training educators. It is hoped that by having participants gain a better understanding and awareness of his/her teaching style that the results of this study will help guide instructional strategies and methodologies used in athletic training classrooms.

Definition of Terms

The following terms and definitions will help the reader understand the terminology related to this study:

1. Athletic training educator: For the purposes of this study, an athletic training educator is a Board of Certification (BOC) Certified Athletic Trainer who is responsible for teaching two or more core courses in an entry-level, accredited undergraduate or graduate athletic training education program.
2. Certified Athletic Trainer (ATC): A Certified Athletic Trainer is a unique health care provider who specializes in the prevention, assessment, treatment and rehabilitation of injuries and illnesses that occur to athletes and the physically active (National Athletic Trainers' Association, 2005c).
3. Teaching Style: Teaching style represents personal attributes and behaviors that are evident in how one conducts his/her class (Grasha, 2002).

4. Pedagogy Based Workshops or Educational Sessions: For the purposes of this study, pedagogy based workshops or educational sessions are defined as seminars that focus primarily on pedagogical practices, improving teaching practices, or address other pedagogical issues.

Delimitations

The participants for this study included athletic training educators who teach in an entry-level, undergraduate or graduate accredited athletic training education program within the United States. The participants were given a 40-item questionnaire called the Teaching Styles Inventory (Grasha, 2002). In addition to the inventory, participants completed a demographic and educational history questionnaire outlining educational experiences and employment history.

Limitations

There are several potential threats to internal and external validity in this study that will be addressed in the next few paragraphs. One possible threat to the internal validity of the quantitative portion of the study is maturation. As described by Onwuegbuzie (2003), maturation involves changing attitudes, beliefs, and intellectual processes due to the passing of time. Individuals who participated in this study may be relatively new educators and may have a teaching style that matches current practices. In contrast, individuals who participated in the study may be more experienced educators and have already changed teaching practices as a result of experience. However, because the data were collected at one point in time, the study is not able to capture the possibility of changes in teaching practice over time.

Another threat to internal validity is selection bias (Johnson & Christensen, 2004). Athletic training education program directors were asked to forward the e-mail containing the link to the electronic survey to other athletic training educators in his/her program. Program directors selected the athletic trainers associated with their respective programs that were eligible for participation in the study. The program director may have elected to not send the e-mail to qualified participants, thus potentially biasing the sample.

Lastly, instrumentation may be another threat to internal validity (Onwuegbuzie, 2003). The researcher found limited data reporting reliability measures on the inventory to be used in this study. As a result, reliability measures were calculated for each of the identified subscales and the overall instrument.

Several potential threats to external validity exist. First, temporal validity as described by Onwuegbuzie (2003) refers to the ability of the results to be generalized across time. Another threat includes the specificity of variables (Onwuegbuzie, 2003). In this particular study, data were collected at one point in time, thus prohibiting the assumption that teaching styles remain the same over time. Another potential threat is population validity, in which the results of this study may not be generalizable to the larger target population (Johnson & Christensen, 2004). Lastly, ecologic validity may be a potential threat (Onwuegbuzie, 2003). Results from this study may not be generalizable across all undergraduate, accredited athletic training education programs.

Organization of Remaining Chapters

The remaining chapters will present relevant information to the current study. Chapter two provides an overview of the current literature pertaining to athletic training

education, athletic training educators, teaching styles, instructional strategies commonly used, and learning styles of athletic training students. Chapter three discusses the methodology used in this particular study. This includes a discussion of the participants selected, ethical considerations, instruments, procedures, design of the study, and data analysis. Chapter four reports the results of the study. In conclusion, chapter five interprets the results of the study, describes the relevance of the results to athletic training education and provides recommendations for future research.

Chapter Two

Review of the Related Literature

Overview

Athletic training education has changed tremendously over the past decade and, as a result, has changed the way in which curricula are provided to students. Historically, athletic training educators possess different educational histories, whereas some have a strong background in pedagogy while others may not have had any exposure to pedagogical knowledge (Hertel et al., 2001). Recent discussions in the medical and athletic training literature are beginning to question whether being a content expert is enough to be an effective educator. The medical and allied health educational research has primarily focused on learning styles of the students and implementing instructional strategies to improve learning (Brower et al., 2001; Clark & Harrelson, 2002; Heinrichs, 2002; Mensch & Ennis, 2002; Peer & McClendon, 2002; Stradley et al., 2002; Walker, 2003). Unfortunately, not much focus has been given to the teaching styles of these educators and how these styles permeate the classroom environment.

In the first section of this chapter, athletic training education will be traced from its early origins to current practice. In the second section of this chapter, research on educational backgrounds will be presented as it pertains to pedagogical knowledge and subject matter expertise. The third section examines the research and literature on

teaching styles. The fourth section of this chapter discusses research on learning styles. Finally, the fifth section highlights pedagogical strategies as they relate to teaching styles.

Athletic Training Education

Athletic training has historical roots back to ancient Greece and has evolved significantly over the years. The early days of athletic training education relied heavily on apprenticeships and internships (Ebel, 1999). Formal training in the field of education was seen as a drawback in the early 1900's. Many practicing athletic trainers felt that educated individuals would not be willing to complete menial tasks such as cleaning whirlpools (Ebel, 1999). It was not until 1941 that the first educational lessons in athletic training were published in *The Trainers Journal*. Almost a decade later, the National Athletic Trainers' Association (NATA) was founded. "Recognizing the need for a set of professional standards and appropriate professional recognition, the National Athletic Trainers' Association helped to unify athletic trainers across the country by setting a standard for professionalism, education, certification, research and practice settings" (National Athletic Trainers' Association, 2005a, ¶ 3).

In 1956, the first committee was established under the NATA to oversee the professional preparation of athletic trainers. Several years later, a curriculum model evolved that primarily focused on three main areas: pre-physical therapy courses, management and prevention of athletic injuries, and physical education. The next three decades of athletic training education evolved significantly into identifiable professional preparation programs. Coursework focused more on specialization in athletic training and was combined with practical experience requiring a specified number of hours (Ebel, 1999). However, two separate paths still existed for prospective athletic trainers to

achieve certification. Individuals could either graduate from an internship program or an NATA approved program and still be deemed eligible to sit for the national certification examination.

It was in 1970 when the first curriculum-based programs were approved by the NATA (Ebel, 1999). At that time, there were only 14 NATA approved curriculum-based programs nationwide. Approval of athletic training education programs remained the responsibility of the NATA until the mid-1990's. During this period, the Joint Review Committee on Athletic Training (JRC-AT) assumed this responsibility under the Commission on Accreditation of Allied Health Education Programs (CAAHEP). The JRC-AT is responsible for developing standards and guidelines for the accreditation of entry-level athletic training education programs (Ebel, 1999). In 2006, the JRC-AT will become independent from CAAHEP guidelines and will be the sole accrediting body for athletic training education programs (Joint Review Committee on Athletic Training Education, 2005).

In 1994, CAAHEP and the JRC-AT announced the elimination of the internship route to achieve national certification by the Board of Certification (BOC). As of 2004, all students must now graduate from an accredited undergraduate or graduate athletic training education program to be eligible to sit for the BOC exam (Hertel et al., 2001). The Education Council was formed by the NATA to facilitate quality improvement in accredited undergraduate or graduate athletic training education programs. As a result, the preparation and mission of athletic training programs is more clearly defined by the NATA Education Council in the following statement:

Entry-level athletic training education uses a competency-based approach in both the classroom and clinical settings. Using a medical-based education model, athletic training students are educated to serve in the role of physician extenders, with an emphasis on clinical reasoning skills. Educational content is based on cognitive (knowledge), psychomotor (skill), affective competencies (professional behaviors) and clinical proficiencies (professional, practice-oriented outcomes). (NATA Education Council, 2005, ¶ 2).

In less than 30 years, the number of approved accredited programs has significantly evolved. Currently there are approximately 338 entry-level accredited athletic training education programs in the United States (Commission on Accreditation of Allied Health Education Programs, 2005). As a result of educational reform and the increase in number of accredited programs, a need for doctoral-educated athletic trainers exists (Hertel, et al., 2001). Hertel et al. (2001) state that the need for athletic trainers to attain terminal degrees is imperative if they wish to influence higher education policy, provide leadership in athletic training and higher education, and conduct necessary research to advance the profession.

Educational practices commonly used in athletic training education have been adapted from other disciplines. As a result, little research has been conducted to demonstrate its applicability to the athletic training discipline (Turocy, 2002).

Educational research in athletic training has grown significantly, however, “the breadth and depth of that research still is very limited” (Turocy, 2002, p. S-162). With the recent educational reform requiring curricular changes for athletic training programs, attempts at standardizing and improving the quality of professional preparedness are being made.

Competencies and proficiencies are outlined for students and those tasks are expected to be integrated into the curriculum (Mensch & Ennis, 2002). Current athletic training curriculum consists of the following components:

- Assessment and Evaluation,
- Acute Care,
- General Medical Conditions and Disabilities,
- Pathology of Injury and Illness,
- Pharmacological Aspects of Injury and Illness,
- Nutritional Aspects of Injury and Illness,
- Therapeutic Exercise,
- Therapeutic Modalities,
- Risk Management and Injury Prevention,
- Health Care Administration,
- Professional Development and Responsibilities, and
- Psychosocial Intervention and Referral (Board of Certification, 2005, ¶ 1).

In order to meet accreditation standards as outlined by the JRC-AT, athletic training educators must show that the curriculum emphasizes not only formal instruction in the classroom, but also integrates knowledge into practical settings. Instruction of proficiencies and competencies must be completed in a logical sequence and students should be provided with increasing responsibilities in a supervised clinical setting. In addition, athletic training educators must show that skills and knowledge are learned over time (Commission on Accreditation of Athletic Training Education, 2005). Thus, the need for athletic training educators to have some pedagogical knowledge is evident.

Educational Backgrounds

To the researcher's knowledge, only one study (Hertel et al., 2001) has examined the educational backgrounds of athletic training educators. However, the results of this study are limited because the researchers only examined doctoral-educated certified athletic trainers. It is not uncommon to see athletic training educators holding a master's level degree teaching in an athletic training program. With 116 respondents, Hertel et al. (2001) found that only 24% of those surveyed had a doctoral-level degree in education and/or administration. Approximately 27% held a degree in health and physical education and almost half (49%) held a degree in exercise science. Due to the limited scope of this particular study and a relatively small sample size, the results do not provide a clear picture of what type of educational backgrounds athletic training educators possess.

However, it is clear that athletic training educators do possess different educational histories. Some educators may have a background in pedagogy, whereas others may not have been exposed to any pedagogical knowledge while receiving an education. This phenomenon is not unique to just the field of athletic training. Across all fields in higher education, not all faculty members are trained to teach. This is often attributed to the lack of pedagogical training in graduate programs, which often emphasize content knowledge (Kreber, 2001). The past several decades have placed an increased emphasis on subject matter expertise over pedagogical knowledge. This has reinforced the popular myth that teaching and pedagogy can be learned on the job. The

argument for balance between possessing adequate pedagogical skills and subject matter expertise has a long history in teacher preparation fields (Cochran-Smith, 2005).

With recent changes in the profession, some individuals question if being a content expert is enough. In the past, it has been assumed that those individuals with adequate subject matter expertise would indeed be able to teach. In the medical field, if the clinical teacher has a reasonable amount of medical knowledge, then he/she is deemed capable of teaching (McLeod et al., 2003). Many medical and allied health care professionals will either teach in a formal setting or be asked to teach in a clinical setting (Bligh, 2001; McLeod et al., 2003; Pasquale & Pugnaire, 2002). Rarely are these individuals given the opportunity to undergo formal or informal instruction on pedagogical practices.

When 116 doctoral-educated athletic trainers were asked what competencies would be most important for newly trained doctoral athletic trainers, acquiring skills to teach athletic training courses rated the highest (Hertel et al., 2001). The results of this study suggest that future athletic training educators should receive adequate training in both classroom and clinical pedagogical practices. Exposure to basic pedagogical skills may result in greater achievement gains in the learner (McLeod et al., 2003).

According to Kreber (2001),

If we further contend, as some of us do, that knowledge is not only disseminated but, occasionally, also advanced in the classroom, the fact that future faculty's pedagogical development has received only marginal attention within the disciplines and the academy seems all the more astounding (p. 80).

Kreber (2001) recommends five ways to improve one's pedagogical content knowledge in graduate education. First, curriculum at the doctoral level should include at least two courses in pedagogy. This would allow students to explore educational issues that are prevalent within their discipline. Second, Kreber recommends that dissertation projects be allowed to focus on pedagogy within specific disciplines. Third, graduate students should be allowed the opportunity to teach and to receive feedback on their teaching. Fourth, students should be provided with opportunities to attend seminars and workshops that focus on educational theory and research. Lastly, professors who are affluent in the scholarship of teaching should act as mentors for graduate students.

Shulman (1986) suggests that one must possess content knowledge, knowledge of different instructional methods, and pedagogical content knowledge in order to be an effective instructor. Pedagogical content knowledge refers to one's ability to implement specific instructional strategies for a particular subject matter (Cochran et al., 1993; Ormrod & Cole, 1996). Instructors must be able to take the content to be presented and carry it through a series of steps to achieve pedagogical content knowledge. Pedagogical content knowledge "provides the symbols, language, ideas, concepts, theories, metaphors, analogies, and other forms of knowledge representation, as well as the modes of inquiry, that constitute the knowledge base for effective teaching and learning" (Paulsen, 2001, p. 20). The instructor must critically reflect and interpret the material to be learned, find multiple ways of presenting that information, adapt the material to the student's abilities, and tailor the material to a specific group of students (Cochran et al., 1993). This is often a difficult task for novice teachers or those individuals who do not have a strong pedagogical background (Feinman-Nemser & Parker, 1990). However, it

is important to note that teaching strategies are influenced by much more than just knowledge. The social, political, cultural, and physical environmental contexts of the teaching learning process also contribute to pedagogical content knowledge (Cochran et al., 1993). Research also suggests that preferences for specific instructional strategies stem not only from a variety of social and cultural influences, but also from one's individual teaching style (Entwistle & Walker, 2000).

Teaching Styles

Research on teaching styles in the past has largely been descriptive. Several approaches exist that attempt to define what encompasses style in the classroom. Classroom behavior, personal attributes of an instructor, teaching methods employed, common behaviors across faculty, teacher roles, personality traits, archetypal forms, and metaphors for teaching have all been used in describing teaching styles (Grasha, 2002). Attempting to create a uniform definition is difficult; however, Heimlich and Norland (2002) define teaching style as “a predilection toward teaching behavior and the congruence between an educator’s teaching behaviors and teaching beliefs” (p. 17).

Several authors have developed different ways of studying teaching styles. Grasha (1994) is a well-known researcher of teaching styles. The focus of his research has been at the college and university level. As a result of extensive observations and interviews of teaching faculty across a variety of disciplines and institutions, Grasha performed a thematic analysis suggesting five predominant styles: expert, formal authority, personal model, facilitator, and delegator.

The first style is expert, in which the instructor possesses the knowledge and expertise and the primary concern for instruction is transmission of that knowledge

(Grasha, 1994, 2002). The advantages of this style are that the instructor possesses adequate knowledge and skills necessary to deliver information. A disadvantage of this style includes not explaining any underlying issues about the information that is being transmitted to the student (Grasha, 2003).

The second style is formal authority, whereby the teacher is primarily focused on standard and acceptable ways to accomplish tasks. An advantage of the formal authority style is that expectations are clearly outlined for the student. A disadvantage of using this style is that learning may become rigid and inflexible. Individual preferences or learning styles may be overlooked. Expert and formal authority styles are teacher-centered styles (Grasha, 2003).

The third style is the personal model in which the teacher leads by example. Teaching strategies often include demonstration followed by hands-on learning (Grasha, 1994, 2002). Close collaboration between the student and teacher is an essential component of this style (Grasha, 2003). An advantage of the personal model style is showing learners how to follow a role model. A disadvantage of this style is that learners may only be exposed to one way of doing things. The instructor may think his/her way is best and may not be willing to allow the students to explore other options (Grasha, 2003).

The fourth style is the facilitator and focuses on the students' needs, goals, and abilities and the instructor's willingness to accommodate those needs. Advantages of this style include allowing students flexibility as the instructor focuses on student's needs and goals. A disadvantage of the facilitator style is that it seems to be more time consuming than some of the more teacher-centered styles (Grasha, 2003).

Lastly, the fifth style is the delegator, in which students primarily work independently on projects or in teams (Grasha, 1994, 2002). An advantage of the delegator style is that the students feel as if they possess the knowledge and skills to complete a task with competence. A disadvantage of this style includes the opportunity for misjudgment of student's abilities. The facilitator and delegator styles reflect a student-centered approach to teaching in which faculty members play the resource or consultant role (Grasha, 2003).

Grasha (1994, 2002) describes that most instructors possess each of the styles to varying degrees. Therefore, it is imperative to understand that a teacher is not likely to fit into one category. As a result, Grasha (1994, 2002) developed the following clusters of primary and secondary styles. The clusters are as follows:

- Cluster 1: Primary Teaching Styles: Expert/Formal Authority
 Secondary Teaching Styles: Personal Model/Facilitator/Delegator
- Cluster 2: Primary Teaching Styles: Personal Model/Expert/Formal Authority
 Secondary Teaching Styles: Facilitator/Delegator
- Cluster 3: Primary Teaching Styles: Facilitator/Personal Model/Expert
 Secondary Teaching Styles: Formal Authority/Delegator
- Cluster 4: Primary Teaching Styles: Delegator/Facilitator/Expert
 Secondary Teaching Styles: Formal Authority/Personal Model

Based on 381 faculty member's responses across several disciplines, 38% fell into cluster one, 22% into cluster two, 17% into cluster three, and 15% into cluster four (Grasha, 1994).

Mosston and Ashworth (1990) identified teaching styles along a spectrum, ranging from command style to discovery style. This spectrum contains eleven different teaching styles that are based on the pedagogical unit, which consists of teaching behavior, learning behavior, and objectives. The first half of the spectrum is comprised of styles that focus on the reproduction of knowledge, whereas the second half of the spectrum focuses on knowledge production. Knowledge reproduction results in the regurgitation of already stated facts and concepts, whereas knowledge production focuses on creating or discovering new information. Studies have shown that students in the United States actually prefer styles that focus on reproduction of knowledge as opposed to knowledge production styles (Cothran, Kulinna, Banville, Choi, Amade-Escot, et al., 2005). Similarly, Reinsmith (1994) developed a continuum of archetypal forms of teaching. He identified nine different styles of teaching progressing from a teacher-centered approach to a more student-centered approach. The spectrum and archetypal approach both recognize that there is likely to be an overlap of styles used by the instructors (Mosston & Ashworth, 1990; Reinsmith, 1994).

Trigwell, Prosser, and Waterhouse (1999) also take a similar approach to that of Reinsmith and Mosston and Ashworth. Trigwell, Prosser, and Waterhouse (1999) qualitatively studied teaching styles and as a result developed an Approaches to Teaching Inventory. Five different approaches were identified on a continuum starting with a teacher-focused strategy and ending with a student-focused strategy. Educators, who feel that teaching is a process whereby information is transmitted and learning occurs as information is accumulated, tend to employ more teacher-focused strategies. However, individuals who feel that teaching and learning is a means to help students develop and

change their conceptions tend to use a more student-focused strategy (Prosser and Trigwell, 1998).

Pratt and Collins (2000) developed a teaching perspectives inventory from observations of faculty members in five different countries and across many different cultures. These perspectives focus on different approaches that teachers use based on “an interrelated set of beliefs and intentions that gives direction and justification to our actions” (Pratt, 2002, p. 6). From those observations, five different perspectives on teaching were identified, which include transmission, developmental, apprenticeship, nurturing, and social reform. Pratt (2002) identified the transmission perspective as the most common perspective used in secondary and higher education, in which the learner is an empty container to be filled with the teachers’ knowledge. The developmental perspective focuses on enhancing higher levels of reasoning and problem solving. The apprenticeship perspective identifies learning when students are provided with opportunities to work on authentic tasks in real settings. From the nurturing perspective, the teacher models the behavior that hard work and motivation will lead to achievement. Lastly, from the social reform perspective, the teacher demonstrates a passionate set of ideals that are necessary for the improvement of society (Pratt, 2002).

Previous research on teaching styles or teaching perspectives reveals that styles and perspectives vary across disciplines. Collins, Selinger, and Pratt (n.d.) found that individuals teaching in the life sciences and math/sciences scored significantly higher on the transmission perspective when compared to other disciplines such as language arts. Physical education instructors also scored higher on the transmission perspective. Grasha (2002) also found variance in faculty teaching styles across disciplines. Approximately

77% of the teaching styles employed by 378 cross-discipline faculty members fell into one of the four clusters described by Grasha. Quitadamo and Brown (2001) found that the facilitator and delegator teaching styles were most commonly used in an online learning environment; however, evidence of personal model, expert, and formal authority were also present in the same sample.

Researchers suggest that certain teaching styles lend themselves to implementation of different instructional methods based on teacher preference or the teacher's learning style (Grasha & Yangarber-Hicks, 2000; Harrelson et al., 2000). Grasha (2003) states, "in effect, when people adopt a particular teaching style, various roles, attitudes, and behaviors 'come along for the ride'" (p. 180). Implementing specific teaching styles has been found to create and promote an effective learning environment (Quitadamo & Brown, 2001).

As stated by many researchers, teaching styles are not isolated constructs, but rather a blend of different ideologies. Furthermore, it is unlikely that individuals will have just one isolated style of teaching. Most research suggests that individuals have a dominant style and a secondary style (Collins, Selinger, & Pratt, n.d.). Developing a teaching style is often a life-long process that continues to evolve with time and experience (Heimlich & Norland, 2002). As stated previously, it is not uncommon for faculty members to develop teaching styles based on previous educational experiences (Schaefer & Zygmunt, 2003). Richlin and Cox (1994) believe that it is not unusual for teachers to learn how to teach by trial and error. Teaching styles are influenced by a variety of factors, including the capability of the learner, relationships between the students and the instructor, the need for control over an environment or task, the learning

style of the student, and the demands of the situation (Grasha, 2003). Examining teaching styles allows educators to identify a starting point for understanding their own beliefs and how those beliefs carry over into instructional strategies used in the classroom (Heimlich & Norland, 2002).

Learning Styles

Learning styles represent an individual's preference for learning. Understanding the complexities of learning styles is essential to understanding the interactions that take place between the student and teacher in a classroom environment. Cognitive variables, such as information retention and retrieval, sensory variables, such as visual, auditory, and taste, and interpersonal variables, such as leadership and role modeling are all pieces of the learning style puzzle (Grasha, 1983). Often an individual will employ multiple learning styles, although preferences for one or two do exist. Grasha (2003) states that learning style dominance occurs for two reasons: the first reason is that certain learning experiences reinforce specific behaviors; the second reason is that teaching styles of educators often reinforce a particular learning style. Grasha (2002, 2003) describes this interaction as a dance, where the teacher may lead with a specific teaching style while the student follows by using a particular learning style. Based on classroom observations and previous research in student learning styles and instructor teaching styles, the following patterns have been described by Grasha:

- Pattern 1
 - Teaching style: Expert-Formal authority
 - Learning style: Dependent-Participant-Competitive

- Pattern 2
 - Teaching style: Personal Model-Expert-Formal Authority
 - Learning style: Participant-Dependent-Collaborative
- Pattern 3
 - Teaching style: Facilitator-Personal Model-Expert
 - Learning style: Collaborative-Participant-Independent
- Pattern 4
 - Teaching style: Facilitator-Delegator-Expert
 - Learning style: Independent-Collaborative-Participant (Grasha, 2002, p. 177, 2003, p.184).

Several different researchers have developed models describing learning styles of individuals. Grasha (2002) describes several different learning styles as bipolar constructs. Competitive-collaborative, dependent-independent, and participant-avoidant are the six main dimensions. A competitive individual typically seeks recognition and likes to take the lead, whereas a collaborative individual likes to be involved with group projects and group work. A dependent learner typically only learns what is expected, does not like ambiguity, and prefers structure in the learning process. In contrast, an independent learner tends to work alone, thinks for oneself, and typically likes work that is self-paced. A participant learner engages in activity and discussion and is often considered eager, whereas an avoidant learner does not like to participate and does not like to be put on the spot (Grasha, 2002).

Perhaps one of the most popular measures of learning styles is Kolb's Learning Style Inventory. This inventory is intended to measure the student's information

processing capabilities (Stradley et al., 2002). Kolb describes learner dimensions that are bipolar, such as concrete-abstract and reflective-active. Combinations of dimensions result in identification of different learning styles such as: accommodators, divergers, assimilators, and convergers (Kolb, 1984 as cited in Theall, 1999). Stradley et al. (2002) examined the learning styles of 193 undergraduate athletic training students using the Kolb's Learning Style Inventory. These researchers found that there was a relatively even distribution of learning (29.3% accommodators, 19.7% divergers, 21.8% convergers, and 29.3% assimilators). Brower et al. (2001) found similar results in another sample of undergraduate athletic training students using the Kolb's Learning Style Inventory. However, when compared to other students in similar health care professions, these results are a bit unusual. Nursing, physical therapy, medical, and physician assistant students all demonstrate a dominant learning style preference (Brower et al., 2001).

Harrelson, et al. (2000) examined the learning styles of athletic training educators. Of the one hundred and sixty athletic training educators, approximately 39% were convergers, 37% were assimilators, 8% were divergers, and 16% were accommodators. These authors contend that athletic training educator's teaching practices may be reflective of one's individual learning style. Harrelson, et al.(2000) recommend that educators make a conscious effort to use a variety of instructional methods in order to appeal to a variety of learning styles. Clark and Harrelson (2002), Crews et al. (2000), Peer and McClendon (2002), Stradley et al. (2002), and Walker (2003) also make similar recommendations, stating that a variety of pedagogical practices should be implemented in the classroom environment. "One goal of instruction could be to teach people new

learning styles or at least let them sample unfamiliar ones to determine their personal advantages and disadvantages” (Grasha, 1983, p. 52).

The Adult Learner

Although educators are advised to implement a variety of instructional strategies in the classroom, it is imperative that the educator understand adult learning principles. In addition, educators should be aware of what teaching styles and instructional strategies are preferred by learners. In the 1960’s, Malcolm Knowles introduced the concept of andragogy, which is defined as the science of helping adults learn (Baumgartner, Lee, Birden, & Flowers, 2003). Knowles proposes five basic assumptions in his adult learning model. First, adult learners are more independent and are more self-directed. Thus, teaching styles and strategies used in the classroom should reflect upon this. Second, Knowles proposes that adults come with vast experiences and knowledge and the adult learner should be able to use this knowledge and experience to help drive discussions in the classroom. Third, learning activities should directly relate to the adult’s interest. Fourth, educators should provide activities that are more problem-centered rather than subject-centered. Lastly, Knowles proposes that adult learners are motivated intrinsically rather than extrinsically (Baumgartner, et al., 2003; Kerka, 2002; Knowles, 1969; Leith; 1997).

Brown (2003) suggests that educators who are aware of adult learning principles will create a classroom environment that is more student-centered, which is often characterized by collaborative efforts and a supportive learning environment. It has been proposed that this type of a learning environment is conducive to learning at all ages (Kerka, 2002). However, some research shows evidence that many adult learner

classrooms are primarily teacher-directed. Most adult students do not have a clear preference for either a teacher-director or a student-centered approach. Students were more concerned with the teacher using appropriate methods and characteristics of the teacher. Other students preferred a mix of both approaches (Brown, 2003; Kerka, 2002). Heimlich and Norland (1994) suggest that educators use a wide variety of methods and techniques to appeal to the adult learner.

A study of 395 first-year undergraduates revealed that students expected that the primary teaching method to be used by professors would be formal lecture. This was identified as one of the least favorite teaching methods by this same group. In addition, these students identified role-playing and student presentations as other methods least-preferred. Preferred teaching methods identified by this group include interactive lectures and discussions, as well as group-based activities (Sander, Stevenson, King, & Coates, 2000). In a different study, Hativa and Birenbaum (2000) surveyed 175 engineering and education undergraduates about their preferred approaches to teaching. The students reported a preference for a professor who was clear, organized, and interesting, as well as a professor who encourages students to seek help, and promotes a supportive learning environment. Students least preferred those professors who promoted information transmission and self-regulation. Murray (1985) suggests that students prefer educators that are enthusiastic about his/her profession, speak emphatically, use humor, encourage active engagement of learners, and provide information in a variety of ways. Although, there is no conclusive evidence in which specific teaching styles or strategies are most effective, it does appear that educators

should demonstrate flexibility in his/her approach to the classroom to facilitate meeting the needs of a variety of learning styles.

Pedagogical Strategies

Learning styles of students is more commonly studied than teaching styles (Richlin & Cox, 1994). As a result, a plethora of studies have been conducted reporting different pedagogical strategies perceived to enhance learning. Mensch and Ennis (2002) suggest that athletic training educators should reflect on their current pedagogical practices and also consider implementing what students and other instructors deem to be useful instructional strategies. Within the realm of athletic training, implementing active learning techniques, using problem-based learning, incorporating scenarios, using case studies, and providing authentic experiences have all been identified as strategies that may facilitate learning within the classroom (Heinrichs, 2002; Mensch & Ennis, 2002; Walker, 2003). Fostering a positive learning environment for the student enhanced student learning in athletic training education (Mensch & Ennis, 2002). In addition, sociocultural learning theory (Peer & McClendon, 2002) and cognitive learning processes (Clark & Harrelson, 2002) have been readily identified as conceptual frameworks for use by educators. Perhaps one of the greatest challenges that any professional education program faces is:

To produce professionals who are capable of independent and critical thinking, who can sequentially analyze and solve dynamic problems, who possess a commitment to lifelong learning, who can rapidly understand problems in order to make critical decisions on the field and in the clinic, and who can work as part of a team (Heinrichs, 2002, p. S-189).

However, little research has been conducted on the role of athletic training educators' teaching styles in the use of these strategies. Across all disciplines, it is rare that educators are trained in designing, developing, or evaluating the effectiveness of instructional methods. As a result, factors such as academic discipline and personal beliefs influence instructional strategy selection (Theall, 1999). Educators tend to select specific pedagogical strategies that are personally attractive, which results in instructional bias (Grasha & Yangarber-Hicks, 2000).

Livecchi, Merrick, Ingersoll, and Stemmans (2004) examined the effectiveness of different modes of instruction on examination performance. These authors identified the learning styles of the students and subjected the students to either student-centered or teacher-centered instructional approaches prior to taking a written and practical examination. No differences were found in test performance for the practical examination between modes of instruction; however, the teacher-centered instruction students performed better on the written exam. Walker (2003) suggests that educators using lecture methods, which is a teacher-centered strategy, may actually enable students. The instructor is telling the student what information is important without any student input.

Trigwell et al. (1999) report that teachers who use a more teacher-focused strategy tend to lead students to use a surface approach to learning. Using teacher-focused instructional strategies tends to emphasize formal testing and the assignment of very specific tasks (Schaefer & Zygmunt, 2003). In contrast, those teachers who use student-focused strategies typically lead students to a deeper approach to learning. These students tend to take on a more active role in the learning process, sometimes even

selecting what is to be learned in the class. Schaefer and Zygmunt (2003) reported that nursing faculty members described using a more teacher-centered focus on a self-report assessment of teaching style; however, further examination of teaching philosophies of these same faculty members show a significant trend toward using student-centered instructional strategies. Furthermore, Schaefer and Zygmunt (2003) state that a variety of methods were selected by the nursing faculty members to appeal to different learning styles, but there was not any evidence that these instructional methods selected actually met the needs of the learners. Clearly, more research is warranted in this area, specifically examining the implications of different teaching styles and instructional strategies used in the classroom.

Summary

Due to the limited amount of athletic training educational research, a closer look at the educational backgrounds of athletic training educators is essential to fully understand to what extent these individuals are educated in pedagogical practices. In addition, understanding the teaching styles of athletic training educators may provide insight to the pedagogical strategies used within the athletic training classroom. Few research studies exist in this area; thus, collecting this information may provide a deeper understanding of current educational practices among athletic training educators.

Chapter Three

Methodology

As outlined in the first two chapters, the purpose of this study was to describe the educational backgrounds and teaching styles of athletic training educators. The second purpose of this study was to determine if a relationship existed between educational backgrounds and teaching styles of the aforementioned population. In order to answer the research questions, a correlational research design was used. Participants completed a demographic and educational history questionnaire to assess educational backgrounds. Grasha's (2002) Teaching Style Inventory was used to assess teaching styles. The results are presented in Chapter 4.

This chapter discusses the design of the research study. It includes a review of the research questions, the population and sample, selection of the participants, the research design, and the instruments used. Validity and reliability of the instruments are discussed, in addition to the methods of data collection and analysis.

Research Questions

The following research questions were addressed in this study:

- a) What is the educational background of athletic training educators? This research question was answered by obtaining information on the following variables:
 - Major/Minor in Undergraduate, Graduate, and Postgraduate Degree,
 - Number of years of teaching experience,

- Number of courses taken in education/pedagogy, and
 - Number of workshops or educational sessions attended that focus on pedagogical practices, improving teaching practices, or address other pedagogical issues.
- b) What teaching styles are predominant among athletic training educators? This research question was measured by using the Teaching Styles Inventory as developed by Grasha (2002). Teaching styles are categorized as follows:
- Expert,
 - Formal authority,
 - Personal model,
 - Facilitator, and
 - Delegator.
- c) What is the relationship between educational background and teaching styles among athletic training educators? Relationships were explored between the predominant teaching style and the following variables:
- Major/Minor in Undergraduate, Graduate, and Postgraduate Degree,
 - Number of years of teaching experience,
 - Number of courses taken in education/pedagogy, and
 - Number of workshops or educational sessions attended that focus on pedagogical practices, improving teaching practices, or address other pedagogical issues.

Participants

The population for this study consisted of certified athletic trainers (ATC's) within the United States. Currently, it has been estimated that the National Athletic Trainers' Association (NATA) has 32,000 practicing ATC's (National Athletic Trainers' Association, 2005d). Traditionally, White males have dominated the profession of athletic training. Rapid growth of female athletic trainers in the field has been evident over the past few decades. Currently, 48% of NATA members are female (Hunt, 2004). Approximately 87% of the members are White, 2% Hispanic, 2% African American, and 3% Asian or Pacific Islander. The overall growth of the profession has significantly developed over the past few decades (National Athletic Trainers' Association, 2005b).

Certified athletic trainers may be employed in a variety of settings. Typical settings include high schools, colleges, professional sports teams, sports medicine clinics, and industrial corporations. Recent membership statistics show that 19% of NATA members, or approximately 6,400 ATC's, are employed at the collegiate level. However, this statistic does not specify if the certified athletic trainer is employed by an academic department or by the athletic department. It should also be noted that the membership statistics collected by the NATA do not report specifically whether an individual has any teaching responsibilities at the college/university level. Therefore, it is unclear at the college/university level as to what percentage of the NATA members that are certified athletic trainers have teaching responsibilities. Athletic trainers are also employed at clinics (18%) and high schools (17%) (National Athletic Trainers' Association News, 2005).

Selection of Participants

Participants for this study were Board of Certification (BOC) certified athletic trainers who taught two or more core athletic training classes per year in an entry-level, undergraduate or graduate accredited athletic training education program. Core athletic training classes include courses in risk management and injury prevention, pathology of injury, assessment of injury and/or illness, general medical conditions, therapeutic exercise and rehabilitation, pharmacology, health care administration, and professional development (National Athletic Trainers' Association Education Council, 2005). Currently, the Commission on the Accreditation of Allied Health Education Programs (CAAHEP) identifies 338 entry-level undergraduate and graduate athletic training education programs (Commission on the Accreditation of Allied Health Education Programs, 2005). It has been estimated that there will be close to 350 entry-level accredited programs in the next year.

A non-random, purposive sampling technique was used (Johnson & Christensen, 2004; Tashakkori & Teddlie, 2003). With this sampling strategy, "the researcher specifies the characteristics of the population of interest and locates individuals with those characteristics" (Johnson & Christensen, 2004, p. 215). Entry-level accredited undergraduate and graduate athletic training programs were identified through the CAAHEP and NATA Education Council website. Contact information for each academic program and its program director is provided on the CAAHEP website. Program directors were contacted and asked to forward information to other instructors who meet the requirements for the study. Furthermore, an email was posted on the athletic training educator's listserv in an attempt to recruit more participants. Most entry-

level, accredited undergraduate and graduate athletic training education programs employ at least two faculty members that teach full-time loads. Some programs have more and some have less. Since there are currently 338 accredited, entry-level programs, it was estimated that the sample size for this study would be approximately 700 participants. Johnson and Christensen (2004) recommend for a population of 6,400 that a sample size of 361 would be adequate based on a 95% confidence interval. With the planned sample size of approximately 700 participants, this was almost twice the sample size recommended to obtain adequate power of 0.80 at the $\alpha = 0.05$ level. It was hoped that with this sample size a moderate effect size would be obtained. Using Steven's (2002) *a priori* power analysis tables, the sample size needed for a 5 group MANOVA with 7 dependent variables, was roughly 92 participants in each group to obtain adequate power of 0.80 at the $\alpha = 0.05$ ($c = 0.3354$, whereby c is the standardized mean difference). Using these criteria suggested that a sample size of 460 would be adequate. However, it is important to note that a larger sample size would give the researcher a better chance of identifying any real statistical significance that is not due to sampling error (Johnson & Christensen, 2004; Tashakkori & Teddlie, 2003).

Ethical Nature of Data Collection

Prior to collecting any information, the researcher received Institutional Review Board (IRB) approval. Participants were provided with an informed consent that was part I of the online survey (Appendix A). Completion of the survey instrument indicated permission and participants were instructed to print a copy of the informed consent for their records. All information collected in this study was kept strictly confidential. Records will be kept for a minimum of three years.

Procedures

The procedures for the quantitative data collection in this study consisted of sending out the educational history form and Teaching Styles Inventory (TSI) developed by Grasha (2002) electronically to the participants (Appendix C). This was done by using an internet-based survey collection software called Survey Monkey. Permission to use the TSI was obtained prior to the start of the research study (Appendix D). Prior to sending the surveys out to the participants, the researcher piloted the survey with a small sample of Certified Athletic Trainers (n=11). This provided the researcher with information on clarity of the questions, readability of the survey, and an estimate on time to complete the survey. Corrections were made to the survey as suggested by the participants of the pilot study.

The anticipated timeline for this study was to obtain IRB approval in the fall of 2005. Approval was obtained in November, and e-mails containing the link to the informed consent, demographic questionnaire and Teaching Styles Inventory were sent to the sample in early January 2006. Program directors of each entry-level athletic training education program were contacted via e-mail and asked to forward the e-mail to anyone in his/her program who teaches two or more core classes per year in the athletic training program. The e-mail contained the link to the internet-based survey. Follow-up e-mails were sent 2 weeks and 4 weeks later to enhance response rates. At the same time, an e-mail was posted on the athletic training educator's listserv. The deadline for completion of data collection was February 1, 2006. The remainder of Spring, 2006 semester was spent analyzing data and writing the results. All e-mail communication can be found in Appendix B.

Responses from the demographic and educational history instrument were entered into a spreadsheet. The Teaching Styles Inventory was scored and entered into a spreadsheet downloaded from Survey Monkey. Participants that wanted to receive their Teaching Styles profile entered a code upon completion of the survey. This code consisted of the first four digits of the participant’s date of birth and his/her initials (ex: 0520VJR). This enabled the researcher to share the results of the Teaching Styles Inventory with those participants interested in obtaining his/her results. The results were posted on a website and participants were provided with the link to this website.

A total of 198 athletic training educators responded to the survey. A total of 174 participants completed the survey in its entirety. A total of 338 e-mails were sent out for each wave of data collection. The responses by wave are presented in Table 3.1.

Table 3.1

Response Rates by Wave of Athletic Training Educators

Wave	<u>Total Returned</u>		<u>Complete Surveys</u>	
	Number	Percent	Number	Percent
First E-mail	143	72%	127	73%
Second E-mail	38	19%	33	19%
Third E-mail	17	9%	14	8%
Total	198	100%	174	100%

For this study, a quantitative approach was used to explore the research questions (Johnson & Christensen, 2004). The design of the study was a non-experimental, correlational design (Johnson & Christensen, 2004; Tashakkori & Teddlie, 2003). The

study was non-experimental because participants were not randomly selected and were not assigned to a particular group. A correlational approach was appropriate because the research question aimed to explore the relationship between educational backgrounds and teaching styles (Johnson & Christensen, 2004).

Variables

The primary variables studied were educational background and teaching style. Educational background was measured by collecting information on the following variables: Major/Minor in undergraduate, graduate, and postgraduate degree, number of years of teaching experience, number of courses taken in education/pedagogy, and number of workshops or educational sessions attended that focus on pedagogical practices, improving teaching practices, or address other pedagogical issues. Other demographic variables such as age, gender, race/ethnicity, current job title, academic rank, number of years certified as an athletic trainer, and department or college and type of institution currently employed were obtained. Teaching styles were measured using Grasha's Teaching Style Inventory (2002). Grasha (1994) states that teaching styles "represented a pattern of needs, beliefs, and behaviors that faculty displayed in their classroom" (p. 142). Teaching styles are classified into five different categories, which include: Expert, Formal Authority, Personal Model, Facilitator, and Delegator (Grasha, 2002).

Instruments

For this study, two instruments were used to collect data. The first instrument was a demographic and educational history questionnaire. The second instrument was the Teaching Styles Inventory. Both of these instruments may be found in Appendix B.

Demographic and Educational History Survey

Participants completed a demographic and educational history questionnaire developed by the researcher outlining educational experiences and current employment. Information collected on this form was similar to the data collected in the Hertel et al. (2001) study examining educational histories of doctoral-educated athletic trainers. Participants were asked to report information on age, gender, race, current job title, academic rank, number of years certified as an athletic trainer, number of years of teaching experience, department or college and type of institution of which they are currently employed. Only the researcher will have access to this information.

Teaching Styles Inventory

The quantitative instrument used was the Teaching Styles Inventory (TSI), which is a 40-item questionnaire (Grasha, 2002; Grasha & Yangarber-Hicks, 2000). Multiple conceptualizations of teaching styles exist; however, not all of these approaches were developed and intended to be used at the collegiate or university level. Therefore, Grasha's Teaching Styles Inventory was used to gain insight into athletic training educator's teaching styles at the collegiate and university level. This instrument was selected because it is widely recognized in teaching style research and is often used as a tool for faculty development. The purpose of the inventory is to allow teachers to evaluate their attitudes toward instructional behavior. The inventory is a self-report instrument containing five subscales representing different teaching styles, each subscale containing eight items. Items are scored on a 7-point scale; with participants indicating to what extent they agree or disagree with the statement. Scores may range from 8 to 56

on each subscale. A high score on the scale indicates an increasing agreement with that style (Grasha & Yangarber-Hicks, 2000).

The development of the Teaching Styles Inventory occurred in the mid-1980's. Grasha (1994) decided to extend his research at that time beyond learning styles into teaching styles. As a result, he spent several years conducting extensive literature reviews, interviews, and observations with faculty members across several disciplines. In addition, he conducted several workshops and seminars in which he also collected information on teaching styles. Subsequently, a thematic analysis was conducted on the thick, rich qualitative data he collected resulting in the development of five different teaching styles. Once the inventory was developed, a total of 381 faculty members completed the TSI. Over 125 different public and private colleges and universities were represented in this sample. Information on 762 classrooms across 10 groups of disciplines was obtained from this study (Grasha, 2002). Reliability measures for each of the subscales across these samples using Cronbach's alpha were measured as: Expert (.78); Formal Authority (.82); Personal Model (.74); Facilitator (.80); and Delegator (.72) (A. Grasha, personal communication, February 17 and 22, 1998 as cited in Gohagan, 2000).

Grasha (2002) states that the five different teaching styles he describes are grounded in the teacher-student interaction in the classroom. Therefore it is impossible to place teachers into one particular category. As a result, Grasha (2002) developed clusters as a result of a thematic analysis from his observations and interviews. Within each of these clusters are basic instructional strategies that the instructor is likely to use. Based

on 381 faculty member's responses, 38% fell into cluster one, 22% into cluster two, 17% into cluster three, and 15% into cluster four (Grasha, 1994). The clusters are as follows:

- Cluster 1: Primary Teaching Styles: Expert/Formal Authority
Secondary Teaching Styles: Personal Model/Facilitator/Delegator
- Cluster 2: Primary Teaching Styles: Personal Model/Expert/Formal Authority
Secondary Teaching Styles: Facilitator/Delegator
- Cluster 3: Primary Teaching Styles: Facilitator/Personal Model/Expert
Secondary Teaching Styles: Formal Authority/Delegator
- Cluster 4: Primary Teaching Styles: Delegator/Facilitator/Expert
Secondary Teaching Styles: Formal Authority/Personal Model

Once the initial results were obtained and the clusters were developed, content validation of the instrument was completed by having educators provide feedback while attending the researcher's workshops and seminars. As a result, these educators agreed with the clusters and provided some additional instructional strategies that could be used in each cluster.

The original Teaching Styles Inventory asked individuals to respond to the assessment by identifying two courses that they were currently instructing and answered the 40 questions for each course. For this study, participants were asked to identify one course that they were currently teaching or have taught within the past year (2005-2006) and answer the 40 items accordingly. Each respondent completed the assessment based on the extent to which those items applied to that particular course. The researcher elected to have participants complete the inventory based on only one class to simplify the procedures and minimize the burden for the participants.

Both the demographic and educational history questionnaire and Teaching Styles Inventory were available online to the participants of the study. It is estimated that the instruments took approximately 15-20 minutes to complete. Once the surveys were returned, the researcher scored each inventory with the scoring key (Grasha, 2002). First, the scores for each style were calculated by summing the item responses on each of the subscales. A mean score was calculated by taking the sum score of each subscale and dividing that number by 8 (number of items on each subscale). The information on the demographic and educational history was also entered into a spreadsheet.

Data Analysis

The alpha level for this study was set at *.05 a priori*. Initially, data analysis began with the calculation of score reliability for the Teaching Styles Inventory. Cronbach's alpha was calculated for scores pertaining to each of the subscales and the overall inventory to assess score reliability of the Teaching Styles Inventory (Crocker & Algina, 1986). Because information regarding score reliability and validity of the Teaching Styles Inventory has not been reported frequently, the researcher elected to perform a confirmatory factor analysis to evaluate the fit of the measured variables to their corresponding latent structure (Raykov & Marcoulides, 2000; Stevens, 2002). Based on the strong evidence that these items do in fact fit into the subscales, a confirmatory procedure was selected. The model was estimated using maximum likelihood estimation. Chi-square, goodness of fit indices (GFI), and comparative fit indices (CFI) were used to determine the fit of the model (Raykov and Marcoulides, 2000). A path diagram for the confirmatory model of the Teaching Styles Inventory is illustrated in Figure 3.1.

The next step in data analysis was to obtain descriptive statistics on the variables from the biographical and educational instrument using SAS, 9.1 statistical software package (SAS Institute, Inc., 2005). These variables include age, gender, race, current job title, academic rank, number of years certified as an athletic trainer, number of years teaching experience, department, college, and type of institution of which the educators are employed. Mean, standard deviation, skewness, and kurtosis were reported for variables on a continuous scale. Frequencies and percentages were used to summarize data that are nominal. For those variables that provided ratio level data, Pearson-product moment correlations were calculated (Johnson & Christensen, 2004). For variables that provided data at the nominal level, a chi-square analysis was used to see if relationships existed. Effect sizes from the chi-square analysis were calculated using Cramer's V, which is interpreted much like the size of a correlation coefficient. The basic assumption of independence of data was met because participants filled out the instrument on an individual basis. Normality of the data was assessed once the descriptive statistics were obtained.

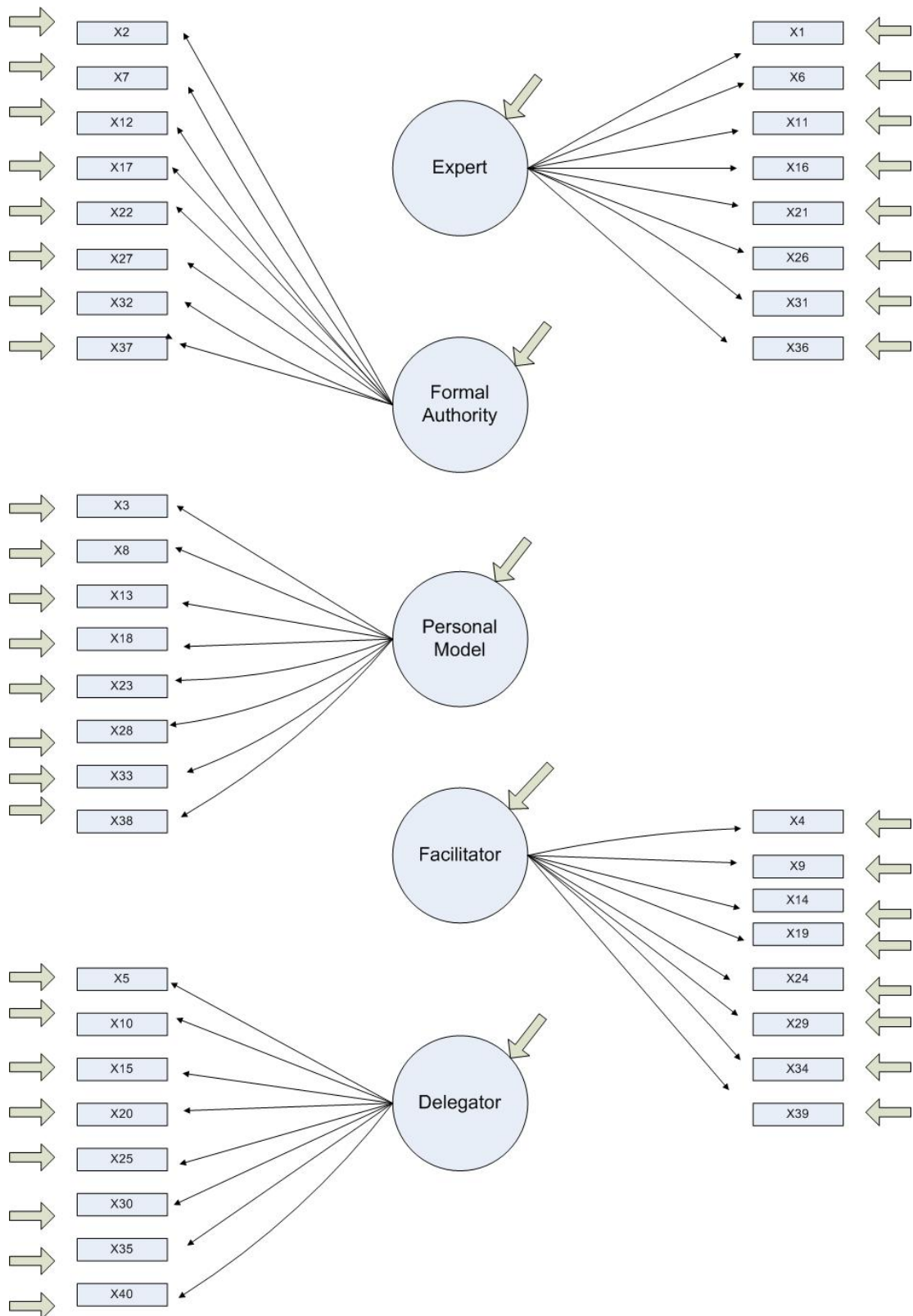


Figure 3.1 Initial Confirmatory Path Model for Teaching Styles Inventory

Data analysis for each research question is outlined below.

- a) What is the educational background of athletic training educators? Descriptive statistics and confidence intervals were calculated for the following variables:
 - Major/Minor in Undergraduate, Graduate, and Postgraduate Degree,
 - Number of years of teaching experience,
 - Number of courses taken in education/pedagogy, and
 - Number of workshops or educational sessions attended that focus on pedagogical practices, improving teaching practices, or address other pedagogical issues.

- b) What teaching styles are predominant among athletic training educators? Scores for each participant were calculated on each of the subscales on the Teaching Styles Inventory. Proportion of participants falling into each category were calculated along with confidence intervals. In addition, participants were placed into the Teaching Styles Clusters as described by Grasha (2002). Teaching styles are categorized as follows:
 - Expert,
 - Formal authority,
 - Personal model,
 - Facilitator, and
 - Delegator.

- c) What is the relationship between educational background and teaching styles among athletic training educators? The variables listed below were categorized.

Relationships were explored between the teaching styles and the following variables:

- Major/Minor in Undergraduate, Graduate, and Postgraduate Degree,
- Number of years of teaching experience,
- Number of courses taken in education/pedagogy, and
- Number of workshops or educational sessions attended that focus on pedagogical practices, improving teaching practices, or address other pedagogical issues.

In order to answer this research question, a MANOVA was used to determine if an overall relationship exists between teaching style and the educational background variables. The grouping variables for the MANOVA included each of the teaching styles: delegator, formal authority, expert, personal model, and facilitator. The dependent variables for the MANOVA included a collection of educational history variables: number of years of teaching experience, number of courses taken in pedagogy, number of workshops or educational sessions attended focusing on pedagogy, major in undergraduate education, minor in undergraduate education, area of study in graduate education, and area of study in postgraduate education.

Chapter Four

Results

The purpose of this study was to describe the educational backgrounds and teaching styles of athletic training educators in CAAHEP accredited undergraduate or graduate athletic training education programs. Certified athletic trainers who taught two or more core athletic training classes in one year were asked to complete an electronic survey online. The findings of this research study are presented in this chapter by each research question.

A total of 338 e-mails were sent out to academic program directors of CAAHEP accredited undergraduate and graduate athletic training education programs. In addition, an e-mail was posted on the athletic training educator's listserv in an attempt to capture more participants. A total of 198 athletic training educators responded to the survey. Twenty-four respondents did not complete the survey in its entirety, thus these participants were removed from the sample. The total sample size for this study was 174.

Reliability and Validity of the Teaching Styles Inventory Instrument

Cronbach's alpha was calculated for each of the Teaching Styles Inventory subscales. For each of the subscales, Cronbach's alpha was: Expert, .54, Formal Authority, .57, Personal Model, .68, Facilitator, .68, Delegator, .32. These reliability estimates are comparable to what Gohagan (2000) obtained in her research on teaching styles of social work educators and lower than what Grasha had communicated to

Gohagan from his national sample. Table 4.1 reports the reliability estimates from these three samples.

Table 4.1

Estimates of Internal Consistency for Teaching Styles

Teaching Style	Current Sample	Gohagan Sample ^a	Grasha Sample ^b
Expert	.54	.58	.78
Formal Authority	.57	.69	.82
Personal Model	.68	.64	.74
Facilitator	.68	.66	.80
Delegator	.32	.54	.72

a- Gohagan (2000); b- Grasha (1998) as reported in Gohagan (2000)

Construct validity was assessed by performing a confirmatory factor analysis using maximum likelihood estimation. Prior to proceeding with the confirmatory factor analysis, the data were screened. Normality was assessed for each item on the inventory and the overall distributions were relatively normal. Items 3, 27, and 32 had slightly leptokurtic distributions with values of 3.77, 2.33, and 2.55 respectively. Data were screened for outliers and there were several outliers detected. The decision was made to include outliers in the data for analysis.

The five-factor measurement model did not represent a good fit to the 40-item inventory. The standardized measurement model may be found in Figure 4.1. The correlations between latent constructs may be found in Table 4.2. It should be noted that the correlation between factor four and factor five was $r = -1.10$, which is not a possible value. This indicated that the measurement model was not functioning properly. A chi-square value of 1247.28 was obtained and was statistically significant ($p < 0.0001$). The

Comparative Fit Indices (CFI) was 0.59, which suggests that the proposed model may not be a good fit. In addition, the Goodness of Fit Index (GFI) was .74, whereby values closer to 1 suggest a better fit of data to the model (Ravkov and Marcoulides, 2000).

Table 4.2

Correlations between the Teaching Styles Inventory Latent Constructs

	F1	F2	F3	F4	F5
F1	1.00				
F2	0.82	1.00			
F3	0.57	0.83	1.00		
F4	0.11	0.54	0.69	1.00	
F5	0.29	-0.42	-0.53	-1.10*	1.00

* The author recognizes that an r value of -1.10 is not possible. This was one indication that the current model was not functioning properly.

Therefore, the researcher elected to create composite factor scores. Composite factor scores were calculated by summing the values of the items on one teaching style subscale to create one composite score. For example, items 5, 10, 15, 20, 25, 30, 35, and 40 were added together to create the delegator factor score. This was repeated for each of the subscales. Following the calculation of the composite factors, five different confirmatory factor analyses were conducted for each of the subscales to see if in fact the intended items were loading on their prescribed scale. This was performed to see if the construct of the individual scales were a good fit. As a result, the fit indices improved for each of the subscales, with the exception of the delegator scale. Individual items were examined on the delegator scale to see if any of the items were not functioning properly

within the estimation models. It was found that item 10 on the delegator scale was not functioning properly and would produce negative parameter estimates. This item was removed from the confirmatory analysis on the delegator scale to determine if the overall fit improved for this particular scale. The fit of the model did improve with the removal of item 10. Table 4.3 reports the fit indices of each of the confirmatory factor analyses. These results suggest that each of the scales were somewhat reliable and that it was safe to proceed cautiously with data analyses.

Table 4.3

Confirmatory Factor Analyses Fit Indices for Each of the Teaching Styles Subscales

Scale	Chi-Square	GFI	CFI
Expert	49.53 (p=0.0003)	0.93*	0.68
Formal Authority	39.31 (p=0.0061)	0.95*	0.80
Personal Model	36.94 (p=0.0119)	0.96*	0.89*
Facilitator	30.73* (p=0.0588)	0.96*	0.94*
Delegator	78.03 (p=0.0001)	0.90*	0.39
Delegator (w/o item 10)	36.22 (p=0.0010)	0.95*	0.57

* Suggests that model would be a reasonable fit based on recommended criteria

Subsequently, Pearson product moment correlations were calculated among the factor scores to determine if relationships existed between the different teaching styles.

Table 4.4 shows the correlations among the factors. Moderate correlations were found between the expert and formal authority scales ($r = 0.45$), expert and personal model scales ($r = 0.31$), formal authority and personal model scales ($r = 0.44$), and facilitator and personal model scales ($r = 0.43$). This suggests that there may be some overlap in the overall constructs of each of these styles.

Table 4.4

Correlations Between the Teaching Styles Inventory Composite Factors

	Expert	Formal Authority	Personal Model	Facilitator	Delegator
Expert	1.00				
Formal Authority	0.45*	1.00			
Personal Model	0.31*	0.44*	1.00		
Facilitator	-0.02	0.19*	0.43*	1.00	
Delegator	0.01	0.08	0.11	0.29*	1.00

* indicates statistical significance, $p < 0.05$

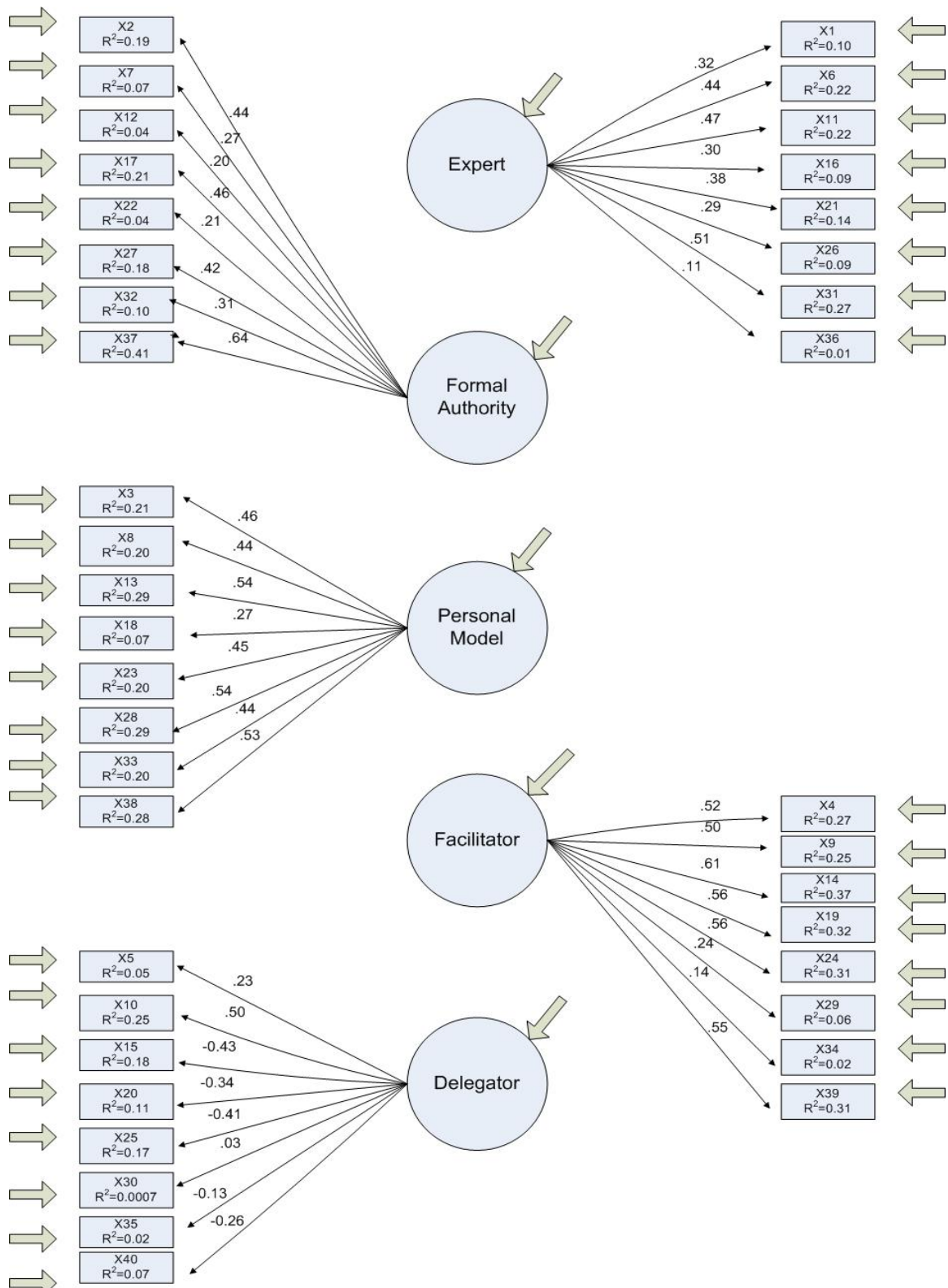


Figure 4.1 Standardized Model for Teaching Styles Inventory Confirmatory Factor Analysis

Demographic Data

A number of demographic variables were collected to describe the participants.

These variables include:

- Age,
- Gender,
- Race/Ethnicity,
- Current job title,
- Academic rank,
- Number of years as a certified athletic trainer,
- Academic department in which he/she is employed,
- Academic college in which he/she is employed, and,
- Type of institution in which he/she is employed.

Age and Gender

Of the 174 participants that completed the survey, the mean age was 37.2 years (95% CI = 36.04, 38.29). The standard deviation was 7.6 years. Ages ranged from 25 to 56. The distribution of ages reported was relatively normal ($sk = 0.51$, $ku = -0.54$).

There were no outliers in this distribution. Approximately 47% of the respondents were female ($n = 82$) and 53% were male ($n = 92$).

Race/Ethnicity

One hundred seventy of the respondents identified themselves as White, which accounts for 98% of the participants. Two respondents identified themselves as Hispanic (1%). One respondent identified him/herself as Asian (0.5%), and one as other

(Japanese/American, 0.5%). None of the participants identified themselves as African-American.

Current Job Title

Participants were asked to identify their current job title as part of the survey. In order to provide a clear picture of the types of positions respondents were currently in, a classification system was used to describe these positions. Participants' responses were placed into categories based on the job titles used for the NATA News Salary Survey (2005). Predominantly, participants were program directors (n = 102, 59%). Table 4.5 shows the distribution of job titles. Some respondents reported more than one job title. Examples include: department chair and program director, program director and head athletic trainer, or clinical coordinator and assistant athletic trainer. In these cases (n = 13), participants were counted in both categories, which is why the total percentages added up from each category equals more than 100%.

Academic Rank

Most of the respondents who participated in this study were currently at the rank of assistant professor (n = 68, 38%). Forty-nine of the participants were at the instructor level (28%). There were a total of 34 associate professors (20%) and 8 full professors (5%). Five identified themselves as adjunct instructors (3%) and 10 identified themselves as other (ex: visiting professor, lecturer) (6%). Figure 4.2 illustrates the breakdown of academic ranks.

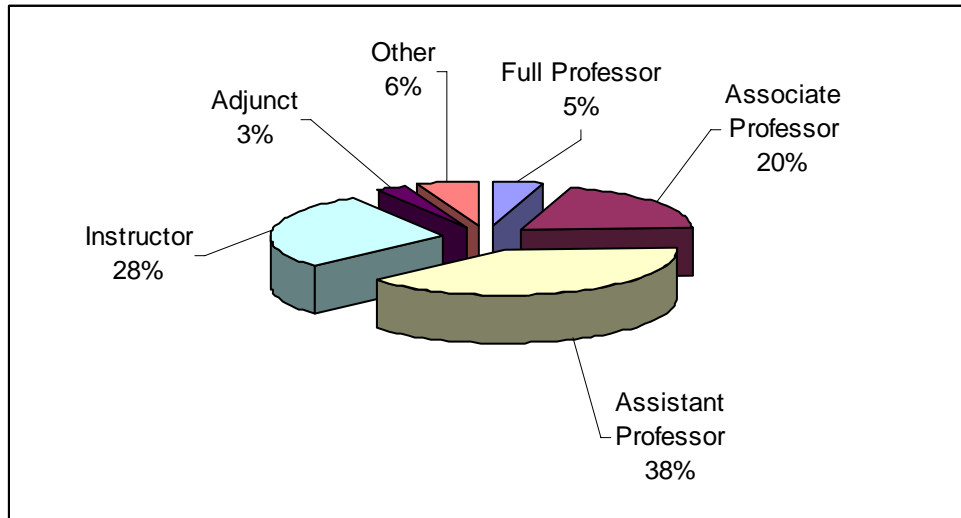


Figure 4.2 Academic Rank Held by Athletic Training Educators

Table 4.5

Job Titles Reported by Athletic Training Educators

Job Title	% (n=)*
Department Chair	6% (10)
Program Director/Coordinator	59% (102)
Clinical Coordinator/Director/Specialist	14% (25)
Head Athletic Trainer	4% (8)
Assistant/Associate Athletic Trainer	12% (21)
Assistant/Associate Professor	6% (10)
Full Professor	1% (2)
Director/Coordinator-Sports Medicine	0.5% (1)
Physical Therapist/Athletic Trainer	0.5% (1)
Instructor	1% (2)
Graduate Research/Laboratory Assistant	1% (2)
Athletic Trainer	2% (3)

* Percentages do not sum up to 100% because respondents may fit into more than one category

Number of Years as a Certified Athletic Trainer

On average, the athletic training educators who participated in this study had been certified for 13.8 years (95% CI = 12.7, 14.8). The minimum value reported for the

number of years certified as an athletic trainer was 2.5 years and the maximum value reported was 31 years. The standard deviation of scores was 7 years. The overall distribution of scores was relatively normal ($sk = 0.63$, $ku = -0.46$) and there were no outliers present.

Academic Department

Participants were asked to identify which department that he/she is currently employed. The researcher grouped departments that were closely related into a single category. As a result, a total of 7 categories were used : 1) Athletic training/ Sports medicine, 2) Exercise science, Sport science, Movement science, 3) Kinesiology, 4) Health, physical education, recreation, dance, 5) Health sciences, Rehabilitation sciences, Health and human performance, 6) Allied health (physical therapy, occupational therapy, etc), and 7) Other (education, math, science, nutrition, and educational leadership). Most participants worked in Health, physical education, recreation, and dance ($n = 43$, 25%). Closely following were Kinesiology ($n = 31$, 18%) and Exercise science, Sport science, Movement science ($n = 30$, 17%). Figure 4.3 illustrates the frequencies for each department.

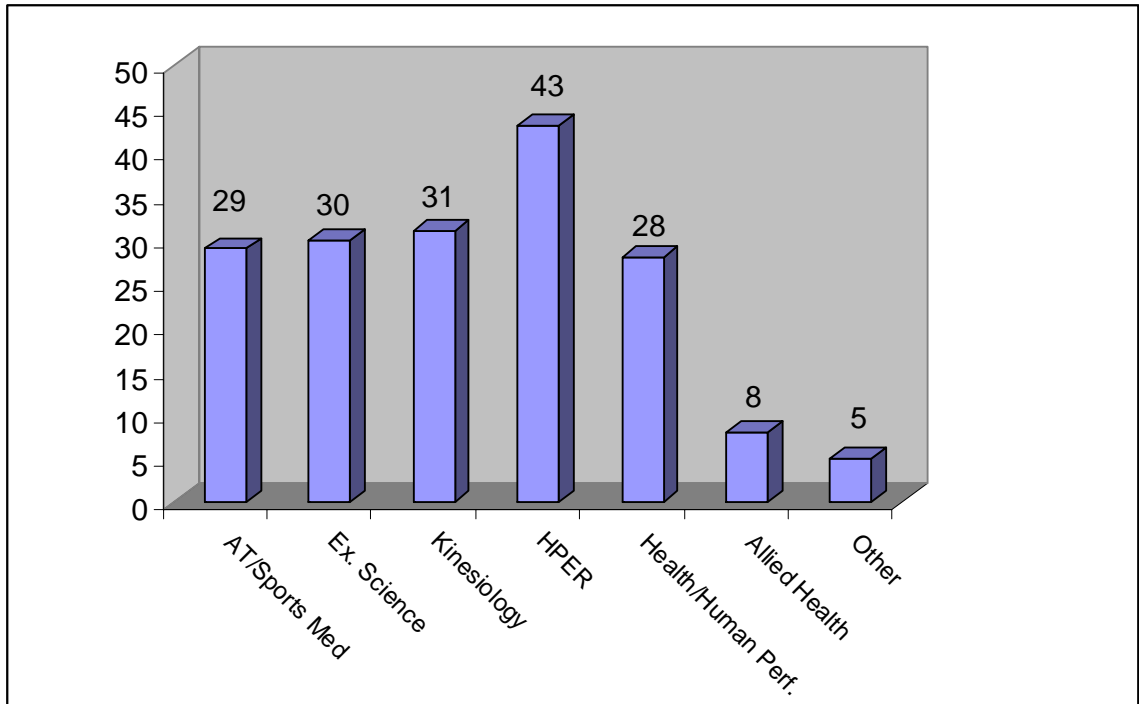


Figure 4.3 Academic Departments in which Athletic Training Educators are Employed
Academic College

Athletic training educators were asked to identify which college that he/she was currently employed. The researcher examined the responses and again categorized responses that were closely related. In this case, 5 categories/colleges were predominant: 1) Education, 2) Arts and Sciences, 3) Allied health, Health professions, or Health and human services, 4) Other (Business administration, fine arts, applied life studies), and 5) Not applicable (based on the type of institution in which he/she was employed). A majority of athletic training educators were employed in the College of Education (n = 62, 35%). The allied health and health professions category employed the second highest number of athletic training educators (n = 47, 27%). Figure 4.4 illustrates the break down of employment of athletic training educators by college.

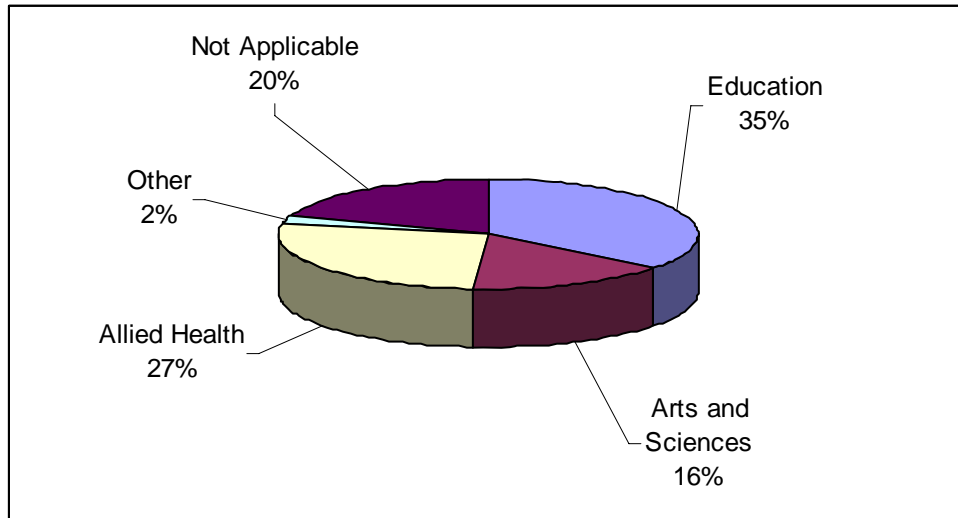


Figure 4.4 Academic Colleges in which Athletic Training Educators are Employed

Type of Institution

Using the Carnegie Foundation for the Advancement of Teaching (2005) classification system, a majority of the respondents were currently employed at a Baccalaureate College- Liberal Arts institution (n = 53, 31%). Thirty-two participants were employed at a Master’s College and University- Type I institution (19%), 25 were employed at a Doctoral/Research University- Intensive institution (14%), 23 were employed at a Master’s College and University- Type II institution (13%), and 21 were employed at a Doctoral/Research University- Extensive institution (12%). Eighteen participants were employed at a Baccalaureate College- General (10%) and 2 participants were employed at a Baccalaureate/Associate’s College (1%). Figure 4.5 provides a graphic illustration of the participant’s responses.

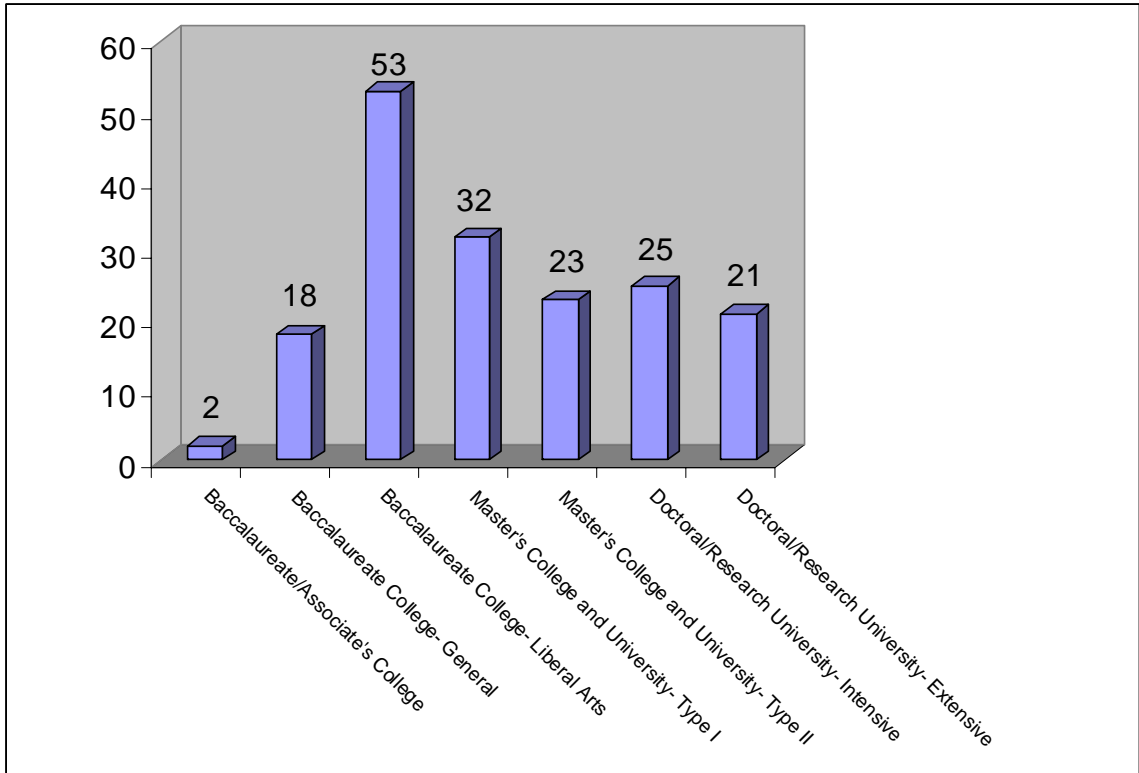


Figure 4.5 Types of Institutions in which Athletic Training Educators are Employed

Research Question One

The first research question was to describe the educational backgrounds of athletic training educators. The following variables were studied:

- Major/Minor in Undergraduate, Graduate, and Postgraduate Degree,
- Number of years of teaching experience,
- Number of courses taken in education/pedagogy, and
- Number of workshops or educational sessions attended that focus on pedagogical practices, improving teaching practices, or address other pedagogical issues.

Major/Minor in Undergraduate Degree

A majority of the participants attained a Bachelor of Science degree (n = 137, 78%), whereas only 35 participants attained a Bachelor of Arts degree (20%). Four participants reported attaining other degrees such as a Bachelor of Behavioral Sciences or a Bachelors of Education (2%). Most of these degrees were awarded in Physical Education (n = 63, 33%) or in Athletic Training (n = 59, 31%). A total of 12 athletic training educators reported a double major and one respondent reported having majored in 4 subject areas. All majors reported by the respondents were counted (for n = 174, a total of 189 majors are reported). A wide variety of majors were reported for this sample and can be found in Table 4.6.

Approximately 45% of the respondents reported not having a minor degree or mentioned that it was not required (n = 81). Those respondents who did report fulfilling the requirements of a minor degree obtained those degrees in areas of athletic training (n = 25, 14%), health and/or wellness (n = 17, 10%), and natural sciences (n = 15, 8%). In addition, five participants reported a double minor. Table 4.6 illustrates the variety of minors that were reported.

Table 4.6

Athletic Training Educator's Areas of Study Completed in Undergraduate Education

Area of Study	Major %(n)*	Minor %(n)*
Physical Education	33% (63)	3% (5)
Athletic Training/Sports Medicine	31% (59)	14% (25)
Exercise Science	9% (17)	2% (3)
Natural Sciences	7% (14)	8% (15)
Health/Wellness	6% (11)	10% (17)
Kinesiology	3% (5)	-----
Education	1.5% (3)	-----
Math	1% (2)	-----
Secondary Education	1% (2)	-----
Psychology	0.5% (1)	6% (10)
English	0.5% (1)	3% (5)
History	-----	2% (4)
Pre-Physical Therapy/Medicine	0.5% (1)	2% (3)
Coaching	0.5% (1)	1% (2)
Nutrition	-----	1% (2)
Political Science	0.5% (1)	-----
Elementary Education	0.5% (1)	-----
Sociology	0.5% (1)	-----
Journalism	0.5% (1)	-----
Recreation	0.5% (1)	-----
Exercise Physiology	0.5% (1)	0.5% (1)
Rehabilitation Science	0.5% (1)	-----
Technical Theater	0.5% (1)	-----
Biblical Studies	0.5% (1)	0.5% (1)
Special Education	-----	0.5% (1)
Broadcasting	-----	0.5% (1)
Vocal Performance	-----	0.5% (1)
Child and Youth Care	-----	0.5% (1)
Spanish	-----	0.5% (1)
No degree	-----	45% (81)

* Percentages do not sum up to 100% because respondents may fit into more than one category

Area of Study Graduate Degree

Over half (63%) of the athletic training educators that participated in this study attained a Master's of Science degree (n = 111). Attainment of a Master's of Arts (16.5%) and Master's of Education (16.5%) was equally split (n = 29 for each). Seven participants (4%) reported other Master's degrees earned and they included: Master's of Science in Education, Master's of Human Relations, Master's of Public Health, Master's of Business Administration, and Master's of Physical Therapy. One participant was currently in progress of completing a Master's of Science degree and two participants reported having two Master's degrees.

Participants attained their Master's degrees in similar content areas as their undergraduate content areas. Twenty-three percent of the participants attained degrees in athletic training and sports medicine (n = 42). Other degree programs focused on physical education (15%, n = 27), exercise science (12%, n = 23), kinesiology (12%, n = 22), and education (12%, n = 22). These content areas may be found in Table 4.7.

Table 4.7

Athletic Training Educator's Areas of Study Completed in Graduate School

<u>Area of Study</u>	<u>Master's (n)*</u>
Athletic Training/Sports Medicine	23% (42)
Physical Education	15% (27)
Exercise Science	12% (23)
Kinesiology	12% (22)
Education	12% (22)
Exercise Physiology	5% (10)
Sports Administration	5% (10)
Biomechanics	3% (6)
Health and Human Performance	3% (6)
Health Care	3% (6)
Psychology	2% (4)
Physical Therapy	2% (3)
Guidance Counseling/Student Development	1% (2)
Nutrition	0.5% (1)
Biology	0.5% (1)
<u>Motor Behavior</u>	<u>0.5% (1)</u>

* Percentages do not sum up to 100% because respondents may fit into more than one category

Area of Study Postgraduate Degree

At the time of this study, 37% of the respondents for this survey had not worked on a postgraduate degree (n = 64). Of those that had completed postgraduate work, 27% had attained a Doctorate of Philosophy (n = 47) and 15% had attained a Doctorate in Education (n = 26). Twenty-nine respondents (17%) reported that their doctoral degrees were in progress at the time of the study. Eight individuals reported attainment of a postgraduate degree in other areas including a Doctorate of Arts (n = 3), Doctorate of Health Science (n = 2), Doctorate of Science (n = 1), and Doctorate of Health and Safety (n = 1).

The areas of study in postgraduate work for athletic training educators were diverse (see Table 4.8). Postgraduate work in curriculum and instruction was the most common area of study reported (9%, n = 15), followed closely by higher education (7%, n = 13), higher education administration (6%, n = 10), and higher education leadership (6%, n = 13).

Table 4.8

Athletic Training Educator's Areas of Study Completed in Postgraduate Education

Area of Study	Doctorate (n)
Curriculum and Instruction	9% (15)
Higher Education	8% (13)
Higher Education Administration	6% (10)
Higher Education Leadership	6% (10)
Exercise Physiology	5% (9)
Athletic Training/Sports Medicine	3% (6)
Health Education	3% (6)
Exercise Science/Biomechanics	3% (6)
Health and Human Performance	3% (5)
Physical Education	3% (5)
Sport/Exercise Psychology	2% (3)
Adult Education/Learning	2% (3)
Health Care/Sports Administration	2% (3)
Physical Therapy	1% (2)
Statistics and Measurement	1% (2)
Interdisciplinary Studies	1% (2)
Kinesiology	1% (2)
Human Development	1% (2)
Health Sciences Leadership	0.5% (1)
Biomechanics	0.5% (1)
Manual Therapy Cervical Spine	0.5% (1)
Rehab Sciences	0.5% (1)
Motor Behavior	0.5% (1)
Library and Information Science	0.5% (1)
None	37% (64)

Number of Years of Teaching Experience

The number of years of full-time teaching for athletic training educators averaged 8.16 years (95% CI= 7.1, 9.2). Number of years teaching full-time ranged from 0 to 30 years with a standard deviation of 6.85 years. The distribution of scores was slightly positively skewed (sk = 1.15; ku = 0.69). There were some outliers in the distribution for those individuals who reported more than 26 years of teaching full-time.

For athletic training educators who have taught part-time, the average number of years teaching was 2.58 (95% CI = 2.08, 3.08). The minimum number of years teaching part-time was 0 and the maximum number of years teaching part-time was 18. The standard deviation of scores was 3.3 years. The scores were positively skewed (sk = 1.89) and had a leptokurtic distribution (ku = 4.06). Outliers were also present in this distribution. These individuals were those who taught part-time for more than approximately 10 years.

Number of Courses Taken in Education/Pedagogy

A variety of responses were provided to this particular question including: numerical values (ex: 10), credit hours (ex: 42 credits), ranges of numbers of courses taken (ex: 5 to 7), and approximations (ex: approx. 12, or 8?). This occurred in approximately 11% of the responses (n = 20). In the instance where credit hours were reported, total credit hours were divided by 3 (typical 3 credit-hours per course) to determine the number of courses taken in education. Where ranges were provided, the middle value of that range was recorded (from previous example, 6 was entered as the

value). In the case where approximations were provided, the actual value provided by the participants was used (from previous example, 12 was entered as the value).

The average number of courses taken in education was 8.13 (95% CI = 6.48, 9.79). The standard deviation was 11.06. The number of courses taken ranged from 0 to 70. The distribution of scores for number of courses taken in education was positively skewed ($sk = 3.13$) and leptokurtic ($ku = 12.37$). Outliers were present in this distribution, whereby individuals who reported taking approximately 20 or more courses fell into this part of the distribution ($n = 11$).

Number of Workshops or Educational Sessions Attended

Again, responses varied among participants when asked to report the number of workshops or educational sessions attended that were pedagogy-based. Some respondents gave numerical values (ex: 10), while others provided ranges of numbers of courses taken (ex: 5 to 7) or approximations (ex: approx. 12, or 8?). This occurred in approximately 12% of the responses ($n = 21$). Where ranges were provided, the middle value of that range was recorded (from previous example, 6 was entered as the value). In the case where approximations were provided, the actual value provided by the participants was used (from previous example, 12 was entered as the value).

On average, athletic training educators had attended 8 workshops that pertain to educational practices or had focused on pedagogy (95 CI = 6.9, 9.3). Some participants responded that they had not attended any workshops of this nature; where as the maximum value reported was 35. The standard deviation was 7.86. The distribution of scores was relatively normal ($sk = 1.18$, $ku = 0.73$). There were a few outliers present.

These outliers were individuals who reported attending 30 or more educational conferences (n = 5).

Research Question Two

The second research objective of this study was to describe the predominant teaching styles of athletic training educators using the Teaching Styles Inventory (TSI) developed by Grasha (2002). Participants were asked to identify one course to use as a frame of reference when answering the questions on the TSI and were asked to rate on a scale of 1 to 7 how much he/she enjoyed teaching that particular course. A 1 indicated that the individual did not enjoy teaching that course and a 7 indicated that the individual really enjoyed teaching the course. In addition, participants were asked to report the primary level of the course taught. Frequencies and percentages of respondents falling into each teaching style category were calculated. The five teaching styles described by Grasha include: expert, formal authority, personal model, facilitator, and delegator. In addition, participants were placed into one of the four clusters described by Grasha (2002).

Course Level and Title

As part of the TSI, participants were asked to select a course to use as a frame of reference. Participants were also asked to identify the primary level of the course. Thirty-nine percent (n = 70) of the participants identified that the class they were teaching was primarily a junior level, undergraduate athletic training course. Twenty-nine percent (n = 51) were sophomore level, undergraduate classes, 15% (n = 27) were freshman, undergraduate level, 13% were at the senior, undergraduate level, and 4% (n = 8) were at the graduate level. Some participants reported more than one primary level of the course,

indicating that the same course was taught at two levels. Therefore, each value was used for data analysis.

Seventeen different types of courses were used as a frame of reference for participant's completing the Teaching Styles Inventory. The most common course reported was evaluation and assessment of athletic injuries (34%), followed by therapeutic modalities (14%) and therapeutic exercise/rehabilitation (10%). Table 4.9 illustrates the course titles reported.

Table 4.9

Course Titles Used as Frame of Reference for Teaching Styles Inventory Responses

Course Title	% (n)
Assessment/Evaluation of Athletic Injuries	34% (59)
Therapeutic Modalities	14% (24)
Therapeutic Exercise/Rehabilitation	10% (17)
Introduction to Athletic Training	7% (12)
General Medical Conditions/Pharmacology	7% (12)
Principles of Athletic Training	7% (12)
Organization/Administration in Athletic Training	4% (8)
Anatomy	3% (5)
Emergency Care/First Aid	3% (5)
Clinical Education/Practicum	2% (4)
Kinesiology	2% (3)
Course Number Reported	2% (3)
Research in Athletic Training	1% (2)
Professional Topics in Athletic Training	1% (2)
Physiology	1% (2)
Advanced Athletic Training	1% (2)
Psychology	0.5% (1)
Nutrition	0.5% (1)

Participants were also asked to rate the extent to which they enjoyed teaching their particular class that was used as a frame of reference. On average, participants rated

their identified class as a 6.4 (95% CI = 6.26, 6.53) on a scale of 1 to 7, where 7 indicates, “I really like teaching this course.” The standard deviation was 0.92. The minimum value reported was a 1 and the maximum value reported was an 8 (this participant really enjoyed teaching that particular course as noted in the response). The response of 8 was scored as a 7. The distribution of scores for this question was negatively skewed ($sk = -2.30$) and was leptokurtic ($ku = 8.54$). Most of the participants ($n = 168$) reported values of 5, 6, or 7 in rating their class.

Teaching Styles Inventory

Mean scores were calculated among all athletic training educators for each of the five subscales. Mean scores, standard deviations, skewness, and kurtosis values are presented in Table 4.10 for each of the teaching styles. Preferred teaching style was reported by identifying the highest mean score on each of the subscales for each of the participants. Overall, the personal model teaching style had a higher average score ($M = 5.56$) among athletic training educators. As a result, the preferred teaching style among athletic training educators appears to be the personal model style (50%, $n = 96$, CI 95% = 42%, 57%). Formal authority was reported as the second most preferred style (27%, $n = 52$, CI 95% = 24%, 37%), facilitator was third (19%, $n = 36$, CI 95% = 13%, 25%), and expert was fourth (5%, $n = 9$, CI 95% = 3%, 9%). Strikingly, none of the participants in this study showed a preference for the delegator teaching style (none of the participants mean scores on the subscales were higher on the delegator scale when compared to the four other subscales).

Table 4.10

Descriptive Statistics for Teaching Styles Identified in the Teaching Styles Inventory

Teaching Style	Mean	SD	Skewness	Kurtosis	Preferred Style (n)
Expert	4.68	0.66	-0.04	-0.19	5% (9)
Formal Authority	5.34	0.60	-0.11	-0.35	27% (52)
Personal Model	5.56	0.53	-0.39	0.07	50% (96)
Facilitator	5.14	0.70	-0.22	0.08	19% (36)
Delegator	3.79	0.58	-0.07	0.15	0% (0)

Preferred teaching style was also examined to see if gender played a significant role. A chi-square analysis was conducted to see if this relationship was statistically significant. Table 4.11 shows the preferred teaching styles by gender among athletic training educators. A chi-square value of 8.08 (df = 3) resulted in a p-value of 0.04. Results suggest that there is a significant difference between gender and teaching style, whereby females prefer the facilitator, and males prefer more of a personal model style. Preferred teaching style was also examined to see if it was a function of the course that participant's were asked to use as a frame of reference. A chi-square value of 52.4 was obtained, which was not statistically significant ($p = 0.42$). This suggests that the type of course that an athletic training educator teaches does not directly relate to one's preferred teaching style.

Once the primary teaching styles of athletic training educators were determined, participants were placed into the teaching styles clusters as described by Grasha (2002). Approximately 61% (n = 106) of the participants in this study fell into cluster 2, in which the personal model, expert, and formal authority teaching styles were predominant.

Thirty-seven percent (n = 64) of athletic training educators fell into cluster 3, in which facilitator, personal model, and expert were the primary teaching styles. Only two percent (n = 4) of athletic training educators fell into cluster one, in which expert and formal authority are the predominant styles, and no participants fell into cluster 4, in which the delegator, facilitator, expert teaching styles are predominant. Preferred teaching style cluster was not a function of gender (chi-square = 0.84; p = 0.65).

Table 4.11

Preferred Teaching Styles of Athletic Training Educators by Gender

Gender	Expert	Formal Authority	Personal Model	Facilitator	Delegator
Male	5%	28%	60%	7%	0%
Female	5%	32%	44%	19%	0%

Research Question Three

The third objective of this study was to determine if a relationship existed between educational background and teaching styles of athletic training educators.

Relationships were explored between the teaching styles and the following variables:

- Major/Minor in Undergraduate, Graduate, and Postgraduate Degree,
- Number of years of teaching experience,
- Number of courses taken in education/pedagogy, and
- Number of workshops or educational sessions attended that focus on pedagogical practices, improving teaching practices, or address other pedagogical issues.

Prior to running a MANOVA, a correlational analysis was conducted to see if relationships were present among the dependent variables. Major and minor in undergraduate, area of study in graduate, and area of study in postgraduate degrees were dummy coded, so that participants were identified as having an education/pedagogy based degree or not. The percentage of athletic training educators holding a degree in education/pedagogy at the undergraduate, graduate, and postgraduate levels is reported in Table 4.12. Overall, 71% (n = 124) of athletic training educators have achieved a degree that is pedagogy-based throughout their educational tenure. Only 29% (n = 50) of the participants never attained a degree in their education that was pedagogy-based. Of those 50 participants, 45 reported that they had taken courses in pedagogy or attended workshops focusing on improving pedagogical strategies. The five participants that reported no formal exposure to pedagogy had preferred teaching styles of formal authority (n = 3) and personal model (n = 2).

Table 4.12

Athletic Training Educator's Attaining an Education Based Degree at the Undergraduate, Graduate, and Postgraduate Level

Type of Degree	Education Based %(n)	Unrelated to Education %(n)
Major in Undergraduate	41% (72)	59% (102)
Minor in Undergraduate	5% (9)	95% (165)
Area of Study Graduate	28% (49)	72% (125)
Area of Study Postgraduate	36% (63)	64% (111)

Correlational analysis among the dependent variables revealed Pearson product moment correlations ranging from a low score of -0.02 (relationship postgraduate area of study between undergraduate major) to a high score of 0.50 (relationship full time

teaching experience and undergraduate major). Several multiple regressions were run to determine if the set of dependent variables were good predictors of each other. However, after analysis of several different models, the highest R^2 value obtained was 0.30. From this, it was determined that each of the dependent variables was in fact contributing uniquely to the overall construct of educational background.

A MANOVA was used to determine if an overall relationship existed between teaching style and the educational background variables. Data were screened prior to running the MANOVA for violations of the underlying assumptions of multivariate normality, independence, and homogeneity of variances. The assumptions of the MANOVA were not violated, thus it seemed reasonable to proceed with the MANOVA. The MANOVA was not statistically significant ($\Lambda = .83$, $F(24, 473) = 1.33$, $p = 0.1377$), thus suggesting that an overall relationship does not exist between educational backgrounds and teaching styles. Since the MANOVA was not statistically significant, Cohen's (1992) effect size was calculated to be $f^2 = 0.09$ for the current sample. This is considered to be a small effect size.

Summary

A total of 198 participants responded to the survey, of which only 174 completed the survey in its entirety. An overwhelming majority of the participants were White (98%) and a fairly equal number of men and women comprised the sample. Over half of the participants were program directors (59%) and 38% were at the assistant professor rank. Thirty-one percent of those that responded were currently employed at a liberal arts institution. A large number of the participants were employed in a College of

Education (36%) and were working in a department of health, physical education, and recreation (25%).

The athletic training educators had diverse educational backgrounds. A Bachelor of Science degree had been awarded to 78% of the respondents and 33% of them had Bachelor's degrees in physical education. Forty-five percent of the participants did not have a minor degree. At the master's level, most of their degrees were Master's of Science (63%) and 23% were in athletic training/sports medicine. Most of the participants did not hold a postgraduate degree (37%). Of those holding a postgraduate degree, 27% held a Doctorate of Philosophy. Nine percent of those degrees were in curriculum and instruction. On average, these athletic training educators had been teaching for 8 years, had completed 8 courses in pedagogy, and had attended 8 workshops that were based on improving pedagogical practices.

The predominant teaching style among the athletic training educators was the personal model style (50%). Surprisingly, none of the participants had a delegator teaching style as their predominant style. The results of the MANOVA suggested that a significant relationship did not exist between educational backgrounds and teaching styles among these athletic training educators.

Chapter Five

Discussion

Introduction

This research was designed to explore and describe the educational backgrounds and teaching styles of athletic training educators. Another purpose of this research was to determine if a relationship exists between educational backgrounds and teaching styles. The results of this study provide insight to the diverse educational backgrounds that athletic training educators possess. In addition, the results suggest that there may be a predominant teaching style among athletic training educators. This research study makes a notable contribution to the athletic training education literature providing information that has yet to be explored in great detail.

Chapter 5 discusses the results that were reported in the previous chapter. In addition, the implications of these findings on the field of athletic training are discussed. The limitations of this research design and procedures are reported. Lastly, recommendations for future research in this area are made.

Research Questions

The following research questions were addressed in this study:

- a) What is the educational background of athletic training educators? This research question was answered by obtaining information on the following variables:
 - Major/Minor in Undergraduate, Graduate, and Postgraduate Degree,

- Number of years of teaching experience,
- Number of courses taken in education/pedagogy, and
- Number of workshops or educational sessions attended that focus on pedagogical practices, improving teaching practices, or address other pedagogical issues.

b) What teaching styles are predominant among athletic training educators? This research question was measured by using the Teaching Styles Inventory as developed by Grasha (2002). Teaching styles are categorized as follows:

- Expert,
- Formal authority,
- Personal model,
- Facilitator, and
- Delegator.

c) What is the relationship between educational background and teaching styles among athletic training educators? Relationships were explored between the predominant teaching style and the following variables:

- Major/Minor in Undergraduate, Graduate, and Postgraduate Degree,
- Number of years of teaching experience,
- Number of courses taken in education/pedagogy, and
- Number of workshops or educational sessions attended that focus on pedagogical practices, improving teaching practices, or address other pedagogical issues.

Discussion and Conclusions

Demographic Data

Although specific demographic data of athletic training educators are not readily known or published, the results from this study provide some insight about this particular population. In 2004, Hunt reported that approximately 48% of NATA members are female and 52% are male. In addition, she reported that approximately 87% of NATA members are White, 2% are Hispanic, 2% African-American, and 3% Asian or Pacific Islander. The sample in this study closely resembles the larger NATA population in regards to gender. For this study, 48% of the respondents were female and 52% were male. Also reflective of the NATA membership, a large percentage of respondents for this study were White (98%). Although the lack of diversity in race among athletic training educators is not surprising as it reflects the national membership, it is an area of concern for athletic trainers. Hunt (2004) stated that concentrated efforts should be made to improve diversity in the athletic training profession as a whole. The NATA has created an Ethnic Diversity Advisory Committee in an effort to raise awareness and to promote diversity. Achieving diversity in the profession of athletic training is essential to provide adequate health care and education to an increasingly diverse nation and athletic population.

In terms of employment characteristics, results indicated that over half of the participants were directors of athletic training education programs (59%). Interestingly, only 24% (n= 42) of the participants held the rank of associate or full professor. The athletic training educators in this study predominantly held lower levels of academic rank (assistant professor, instructor, or adjunct). However, it should be noted that the mean

age of the participants was 37 years, which may explain why lower levels of academic rank were evident. Similar findings were reported in Hertel et al.'s (2001) study of 116 doctoral-educated certified athletic trainers. Forty-four percent of the respondents in that study were at the lower levels of academic rank.

Research Question One

The first research question attempted to describe the educational backgrounds of athletic training educators. The results indicated that the content areas studied by athletic training educators were varied. Although, as many as 22 different undergraduate majors were reported, many participants were awarded a degree in physical education (33%). Almost half of the participants had not fulfilled or were not required to complete a minor degree, those that did, reported as many as 18 different areas of study. The same variety was mirrored in the attainment of a master's degree. Sixteen different areas of study were reported, in which 23% of the participants completed a master's degree in athletic training or sports medicine. At the postgraduate level, 24 different content areas were identified as areas of study for a doctoral degree.

Hertel et al. (2001) looked at the educational histories of 116 doctoral-certified athletic trainers. The researchers found that almost half of those participants obtained doctoral degrees in exercise science, 27% in health and physical education, and 24% in education and administration. To compare the results of this study to Hertel et al. (2001), the 24 different content areas reported in Table 4.8 were categorized into three main content areas: exercise science, health and physical education, and education and administration. In doing so, 52% of the doctoral degrees awarded to participants in this study were in education and administration, 30% in exercise science, and 18% in health

and physical education. The differences noted between the two studies may be attributed to different sampling strategies and inclusion criteria for the studies.

The variety of content areas is reflective of the athletic training educational structure that was in place prior to the required accreditation of athletic training education programs. Students were allowed to sit for the national certification exam after completing either the internship route or an NATA approved program. Because most colleges and universities did not have NATA approved athletic training programs (only 14 NATA approved programs existed in 1970), a large number of students studied other content areas. It wasn't until 2004 that all students wanting to become a certified athletic trainer were required to graduate from an accredited undergraduate or graduate athletic training education program. This attempt to create a more uniform educational system for athletic training students should eliminate some of the variability in educational backgrounds of athletic trainers in the future.

Research Question Two

Grasha's Teaching Styles Inventory (2002) was used to assess what the predominant teaching style was among athletic training educators who participated in this study. Results indicated that 50% of the respondents showed a preference for the personal model style. The instructor leading by example or role-modeling characterizes this style. Teaching strategies often include a hands-on approach to learning. The personal model style is advantageous because it allows the students to see how tasks or skills are performed correctly by following a role model. This style is commonly seen in apprenticeships or internships, where learning occurs by watching and then doing. In

Grasha's national sampling of 381 faculty members, the predominant teaching style for this group was also personal model (1994, 2002).

The personal model style is reflective of athletic training education. Students are typically taught the content knowledge in the classroom, with time set aside to practice skills. More importantly, the clinical education component of athletic training education programs allows students to bridge the content knowledge to everyday practice. This is done by working with a certified athletic trainer, who is often modeling skills of the profession that the student is able to observe and eventually perform.

The second most preferred style was formal authority (27%) followed closely by facilitator (19%). Again, this closely mirrors the results of Grasha's national sampling of 381 faculty members across 10 different disciplines (1994, 2002). A formal authority teaching style is characterized by a standard and acceptable way of accomplishing tasks. Expectations are clearly outlined for students. This closely ties in to athletic training education because of the educational competencies outlined by the accrediting bodies. Athletic training educators must show that specific competencies are formally instructed to the students and that these skills and knowledge are learned over time (Commission on Accreditation of Athletic Training Education, 2005).

When Grasha developed the Teaching Styles Inventory, he reported that it was not likely that an individual would fall only into one category. Rather, an individual's teaching style was a blend of the different styles he presented. As a result, Grasha (2002) developed teaching style clusters, in which two or three styles are primary teaching styles. Over half of the athletic training educators (61%, $n = 106$) in this study fit into cluster 2, whereby the primary teaching styles were personal model, formal authority, and

expert. Individuals in this cluster are more likely to use pedagogical strategies that focus on sharing personal experiences, discussing alternate approaches to performing tasks, coaching and guiding students. Thirty-seven percent fell into cluster 3, in which facilitator, personal model, and expert were the primary teaching styles. Individuals in this cluster are more likely to use pedagogical strategies that include case studies, problem-based learning, simulations, and laboratory projects (Grasha, 2002). Although similar teaching styles are found in both clusters 2 and 3, cluster 2 strategies tend to be heavily based on role modeling. Cluster 3 pedagogical strategies tend to allow more guided learning using the educator as a resource.

Interestingly, none of the participants in this study had delegator as their primary or preferred teaching style and none of the participants fell into cluster 4, whereby the predominant styles are delegator, facilitator, and expert. These results are very different when compared to other studies using the Teaching Styles Inventory. Based on 381 faculty member's responses across several disciplines, 38% fell into cluster 1, 22% into cluster 2, 17% into cluster 3, and 15% into cluster 4 (Grasha, 1994). The differences seen in the distribution of scores among clusters may be due to the differences in the samples. Grasha's sample was very heterogeneous, whereas the sample from this study was relatively homogenous in terms of academic discipline.

The delegator style focuses more on the teacher/instructor allowing students to work independently on assignments, groups, and projects. The teacher/instructor functions in the capacity of a resource for the student. Students learn to be independent learners. This strategy may not be appropriate for service or medical professions in which students are dealing with "live" patients; whereas other disciplines may allow the

student more room to explore in the learning process. In athletic training education, typically a younger athletic training student works closely with his/her instructors to develop entry-level athletic training knowledge and skills. Turning a student loose to independently learn these skills may not be an appropriate strategy for a younger student. As a student develops and matures in the profession, it would seem appropriate that this strategy be implemented. In this particular study, participants reported that only 13% of the courses taught at the senior level were used as a reference for the Teaching Styles Inventory. Only 4% were at the graduate level. Perhaps this is why most of the participants did not favor this particular style.

Research Question Three

In order to answer this question, participants were identified as having a degree in education or not having a degree in education. This was repeated for all levels of education (undergraduate, graduate, and postgraduate). When classified as such, 71% of the participants in this study attained a degree in education at some level. Of those that did not, all but five reported having attended workshops that focused on improving pedagogical practices or have taken courses related to pedagogy. For the most part all participants had some exposure to pedagogy in their career.

However, it appears that the variables comprising educational background for this study were not good predictors of teaching style. The variables used to create the construct of educational background included major and minor in undergraduate, area of study for graduate and postgraduate work, full-time and part-time teaching experience, number of courses in pedagogy, and number of educational workshops attended focusing on improving pedagogical strategies. These variables may not be a good predictor of

teaching style because the focus was on the amount of educational background.

Participants were asked to report 'how many' or 'how much' of these particular variables.

Perhaps it is the quality of those experiences that matter rather than the quantity.

Limitations

There were several limitations discussed in Chapter 1; however, some merit further discussion after completing this study. There were limitations in the design of the survey instrument. The instrument was piloted with a small sample of certified athletic trainers and feedback was provided regarding the clarity of questions, any grammatical errors, and the structure of the questions. At the same time, the pilot sample was actually able to test the link to the survey online and was able to determine if any technical issues with the online survey existed. None were reported from the pilot sample. However, when the initial e-mail was sent out and participants began to complete the survey, several participants contacted the researcher because they were unable to move from page 2 of the survey to page 3. After re-examining the structure of the survey, there were 2 questions in which participants were having difficulty. Question 9 (see Appendix C) on the survey required responses to both full-time and part-time. Some participants were entering only one value. The same was true for question 11. Participants were not entering a response to both major and minor. Once notified of this problem, the researcher went into the survey and made a note to the participants to enter values/responses to both. This technical difficulty may have prevented participants from completing the survey, thus affecting the total number of completed surveys obtained.

A second issue in relation to the structure of the survey pertained to questions 14 and 15 (see Appendix C). A variety of responses were reported for these two questions.

Some respondents gave numerical values (ex: 10), while others provided credit hours (ex: 42 credits), ranges of numbers of courses taken (ex: 5 to 7), and approximations (ex: approx. 12, or 8?). Some participants provided responses such as “too many” or “can’t remember” and as a result were not used as part of the data analysis (n = 6). One participant even suggested that a range be provided along with the question. If this educational background survey is used again, then further revisions on the wording and structure of the question should be considered for future research.

In addition, it appears that the length of the survey may have prevented some individuals from completing the entire survey. Eighteen participants completed only the first portion of the survey, which reported only demographic information. These individuals did not complete the Teaching Styles Inventory and were, therefore, not included in the data analysis for this study.

Another small change to the structure of the Teaching Styles Inventory was made. In the original survey, Grasha (2002) asked individuals to answer the inventory based on two courses. In this survey, the researcher elected to have participants only answer the inventory based on one course to minimize the burden on the participants. This change in the structure of the survey may have contributed to the lower reliability estimates obtained in this sample. Another possible reason for the lower reliability estimates may be contributed to the nature of the sample. Grasha’s reliability estimates were obtained from an original sample that was a national sample across 10 different disciplines. In addition, Grasha had a much larger sample (n = 381) (Gohagan, 2000). The smaller sample size and the relative homogeneity of the sample in this particular study may have contributed to the lower reliability estimates.

Lastly, another limitation to this study is the manner in which the sampling was conducted. A smaller than anticipated sample size was collected. Program directors were identified and contacted by e-mail asking for participation in the study. In addition, program directors were asked to forward the email to individuals within their program that would also qualify to participate in the study. It is unknown whether some program directors forwarded the e-mail to others in their program. If the program director did not complete the survey and then in turn, did not forward the e-mail to eligible participants, eliminating an entire program from the sample was possible. However, the researcher attempted to lessen these effects by posting the e-mail asking for participation on the athletic training educator's listserv.

Recommendation for Future Research

Several areas of future research are warranted upon completion of this study. The first area that merits further examination is in regards to the reliability and the construct validity of the Teaching Styles Inventory. With this particular sample, the inventory yielded less than desirable reliability estimates (Cronbach's alpha). In addition, the confirmatory factor analysis did not indicate that the proposed model was a good fit with the data collected. Upon further analysis, there were problems with the estimation of the model and specific items were not functioning properly within the model. Further evaluation of the psychometric properties of the Teaching Styles Inventory would be worth examining in later research.

Another area of future interest lies in examining the educational backgrounds of athletic training educators in the future. Athletic training is a relatively young profession and has undergone several changes that have reshaped the educational system. From this

study, results indicated that educational backgrounds were extremely diverse. This was reflective of the dual pathways that existed for one to become a certified athletic trainer. Now that one must graduate from an accredited athletic training education program (either at the graduate or undergraduate level), it would be of interest to see how this changes the educational backgrounds of future athletic training educators.

The connection between teaching styles and learning styles is another area that warrants further exploration. Predominant styles were identified among athletic training educators and these styles are supposed to equate to the application of specific pedagogical strategies used in the classroom. The natural next step in the research process would be to determine what specific pedagogical strategies are employed in the athletic training education classroom and what factors influence the selection of these strategies. In addition, it would be appropriate to determine if in fact these pedagogical strategies actually reflect the individual's predominant teaching style.

A second component to explore within the classroom includes examining the connection between teaching styles and learning styles. Harrelson, et al. (2000) recommended that educators make a conscious effort to use a variety of instructional methods in order to appeal to a variety of learning styles. Further examination of the importance of matching or mismatching learning styles to teaching styles may provide a clearer picture of classroom dynamics. Understanding what teaching styles are valued by adult learners may also provide valuable insight to student-teacher interactions.

The last area that warrants future research is coming to a better understanding of the variables or characteristics that predict teaching style. In this particular study, a host of variables that reflected areas of study, amount of teaching experience, and exposure to

pedagogical courses and workshops were used as predictors of teaching style. However, it was found that these variables were in fact not good predictors. Future research in this area may glean insight as to what particular variables could be potential predictors of teaching style. Quality or type of educational experiences, types of mentors or instructors that individuals were exposed to, or even personality traits are areas to consider. In addition, examining employer's expectations of the educator and current practices at the educator's institution should also be considered.

Summary

With the ever-changing dynamics of the athletic training profession, it is imperative to have a better understanding of those that are responsible for educating future professionals in the field. Most of the previous athletic training education literature has focused on the learning styles of athletic training students and the use of appropriate instructional strategies in the athletic training classroom without considering the experiences or background of the athletic training educator. Athletic training educators have extremely diverse experiences in relation to educational background and exposure to pedagogical content. To the researcher's knowledge, there had not been any published research examining the teaching styles of athletic training educators. From this study, the preferred teaching styles of athletic training educators, personal model and formal authority, tend to reflect the nature of athletic training education as it is currently designed. With the recent reform in athletic training education, students are taught skills and knowledge in a formal classroom setting, and then allowed to observe, practice, and apply those skills in a clinical education setting under close supervision. Determining the effectiveness of this educational model will be of interest as more time passes. Although

this study has provided valuable insight on the background and styles of athletic training educators, it has only scratched the surface in regards to fully understanding the complexities of the dynamic interactions that take place in the classroom environment and how that affects the overall development of the athletic training student. It is hoped that future research in this area will provide additional insight into these complexities.

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Appendix A: Informed Consent

(Please note that this consent was the first part of the online survey)

Appendix A: (Continued)

Informed Consent for an Adult

Social and Behavioral Sciences
University of South Florida

Information for People Who Take Part in Research Studies

Researchers at the University of South Florida (USF) study many topics. For this particular study, we are interested in learning about the teaching styles and educational backgrounds of athletic training educators. To do this, we need the help of people who agree to take part in a research study.

Title of research study: “Educational Backgrounds and Teaching Styles of Athletic Training Educators in Entry-Level CAAHEP Accredited Athletic Training Programs”

Person in charge of study: Valerie Rich MA, ATC/L, CSCS

Study staff who can act on behalf of the person in charge: Micki Cuppett EdD, ATC/L

Where the study will be done: This study will be conducted via an electronic survey that is being sent out across the country.

Should you take part in this study?

This form tells you about this research study. You can decide if you want to take part in it. You do not have to take part. Reading this form can help you decide.

Before you decide:

- Read this form.
- Talk about this study with the person in charge of the study or the person explaining the study. You can have someone with you when you talk about the study.
- Find out what the study is about.

You can ask questions:

- You may have questions this form does not answer. If you do, ask the person in charge of the study or study staff as you go along.
- You don't have to guess at things you don't understand. Ask the people doing the study to explain things in a way you can understand.

After you read this form, you can:

- Take your time to think about it.
- Have a friend or family member read it.
- Talk it over with someone you trust.

It's up to you. If you choose to be in the study, then you can sign the form. If you do not want to take part in this study, do not sign the form.

Appendix A: (Continued)

Why is this research being done?

The purpose of this study is to better understand the educational backgrounds and teaching styles of athletic training educators. There is a significant gap in the literature examining these two areas in athletic training educators.

Why are you being asked to take part?

We are asking you to take part in this study because you teach two or more core athletic training course throughout the year in an accredited undergraduate or graduate athletic training education program. Athletic training educators across the country are being asked to participate in this study.

How long will you be asked to stay in the study?

You will be asked to spend about 20-30 minutes completing an electronic survey to participate in and complete this study.

How do you get started?

If you decide to take part in this study, you will need to complete the electronic survey. The link to the survey is included in the email sent to you. If you decide to participate, then you should click the hyperlink to the electronic survey to get started. Completion of the survey will be considered permission and you should print a copy of this consent for your records.

What will happen during this study?

Once you read through the informed consent and decide to participate in this study, you will click on the link to the electronic survey. There are two parts to the survey for you to complete. The first part of the survey will ask you to respond to questions regarding demographic and educational history information. The second part of the survey is the Teaching Styles Inventory, which is a 40-item questionnaire. It is estimated that completion of this survey will take approximately 20-30 minutes to complete.

Will you be paid for taking part in this study?

While you will not be paid for participating in this study, taking part in this research study may contribute to our overall knowledge of the educational backgrounds and teaching styles of athletic training educators.

What are the potential benefits if you take part in this study?

The potential benefits to you are to gain a better understanding of what your teaching style is. Participants will be able to score their inventory and obtain their teaching style with the key that will be posted on the researcher's website upon completion of the project.

Appendix A: (Continued)

What are the risks if you take part in this study?

There are no known risks to those who take part in this study.

What will we do to keep your study records private?

Federal law requires us to keep your study records private. Only the primary investigator will have access to the data. However, certain people may need to see your study records. By law, anyone who looks at your records must keep them confidential. The only people who will be allowed to see these records are:

- The study staff.
- People who make sure that we are doing the study in the right way. They also make sure that we protect your rights and safety:
 - The USF Institutional Review Board (IRB)
 - The United States Department of Health and Human Services (DHHS)

We may publish what we find out from this study. If we do, we will not use your name or anything else that would let people know who you are.

What happens if you decide not to take part in this study?

You should only take part in this study if you want to take part.

You can get the answers to your questions.

If you have any questions about this study, call Valerie Rich MA, ATC/L, CSCS at 813-974-1189 or contact Valerie Rich via email at: vrich@coedu.usf.edu

If you have questions about your rights as a person who is taking part in a study, call USF Research Compliance at (813) 974-5638.

Consent to Take Part in this Research Study

It's up to you. You can decide if you want to take part in this study.

I freely give my consent to take part in this study. I understand that this is research. I have received a copy of this consent form.

Please print a copy of this consent for your records.

Appendix B: Cover Letters

(Initial e-mail, second follow-up e-mail, and third follow-up e-mail)

Appendix B: (Continued)

Cover Email (Please note that this letter was distributed via email January 4, 2006)
Dear Athletic Training Educator,

My name is Valerie Rich and I am a doctoral candidate at the University of South Florida. I am in the process of collecting data for my dissertation titled, "Educational Backgrounds and Teaching Styles of Athletic Training Educators in Entry-Level CAAHEP Accredited Athletic Training Programs."

The purpose of this letter is to invite you to participate in this survey, which is designed to describe the educational backgrounds and teaching styles of athletic training educators. For the purposes of this study, an athletic training educator is defined as an individual who is a Certified Athletic Trainer who teaches 2 or more core athletic training courses in a year in an undergraduate or graduate athletic training education program. If you meet this requirement, then you are eligible to participate. In addition, I am requesting that you would forward this email to other athletic training educators within your academic program that would be eligible to participate in this study.

The first part of the survey requests information regarding your educational history and demographic information. The second part of the survey to be completed is the Teaching Styles Inventory, which was designed to determine your predominant teaching style. It is estimated that it will take 10-15 minutes for you to complete the survey. Upon completion of the survey, you will be provided with the opportunity to request the results of your Teaching Styles Profile. Directions will be provided to you as to how to obtain these results. Your responses will be anonymous and you will not be asked to supply your name or any other contact information.

The following link (<http://www.surveymonkey.com/s.asp?u=771721519073>) will direct you to the informed consent page that will describe the study in full detail. After reading the consent form, simply click "next" to continue with the survey. If you have any questions, comments, or technical difficulties, please contact me, Valerie Rich, at (813) 974-1189 or vrich@coedu.usf.edu or my major professor, Micki Cuppett at (813) 974-3498.

Thank you in advance for your time and effort in completing this survey!

Sincerely,
Valerie Rich MA, ATC, CSCS
Doctoral Candidate
Department of Physical Education, Wellness, and Sports Studies
University of South Florida
4202 E. Fowler Ave PED 214
Tampa, FL 33620
(813) 974-1189
vrich@coedu.usf.edu

Appendix B: (Continued)

Second Follow-Up Email (Please note that this letter was distributed via email January 18, 2006)

Dear Athletic Training Educator,

If you have already completed the Teaching Styles Inventory, I would like to thank you for your time and effort! I greatly appreciate it! If you provided a code at the completion of the survey and wish to view your teaching style profile, you may click on the following link to retrieve your scores: <http://pe.usf.edu/surveyV.html>

If you haven't had time to complete it yet, there's still time left. Here's the website: <http://www.surveymonkey.com/s.asp?u=771721519073>

In case you deleted my first email and would like the details of my research, I have included my original email below.

Thank you so much for taking time out of your busy schedule to assist me with my research!

Sincerely,
Valerie Rich MA, ATC, CSCS
Doctoral Candidate
Department of Physical Education, Wellness, and Sports Studies
University of South Florida
4202 E. Fowler Ave PED 214
Tampa, FL 33620
(813) 974-1189
vrich@coedu.usf.edu

Appendix B: (Continued)

Third Follow-up Email (Please note that this letter was distributed via email January 30, 2006)

Dear Athletic Training Educator,

If you have already taken the time to complete the Teaching Styles Inventory, thank you so much for your time and input! It is greatly appreciated! If you provided a code at the completion of the survey and wish to view your teaching style profile, you may click on the following link to retrieve your scores: <http://pe.usf.edu/surveyV.html>

If you haven't had time to complete it yet, there's still time left. Here's the website: <http://www.surveymonkey.com/s.asp?u=771721519073>

The deadline for completing the survey is quickly approaching. It is February 1st at 5pm.

Following is the original email I sent, in case you need more information. Thank you for your assistance with this!

Sincerely,
Valerie Rich MA, ATC, CSCS
Doctoral Candidate
Department of Physical Education, Wellness, and Sports Studies
University of South Florida
4202 E. Fowler Ave PED 214
Tampa, FL 33620
(813) 974-1189
vrich@coedu.usf.edu

Appendix C: Educational and Demographic Questionnaire and

Teaching Styles Inventory

(Please note that this survey was posted on Survey Monkey)

Appendix C: (Continued)

Demographic/Educational Questionnaire

The following demographic and educational history questions are a part of the data analysis for this particular research study. Please answer the following questions completely and as accurately as possible. Once you complete the initial demographic and educational history questionnaire, you will be directed to the Teaching Styles Inventory.

1. Gender: Male Female

2. Age: _____

3. What is your Race/Ethnicity:
 - African-American
 - Asian
 - Hispanic
 - White
 - Other _____

4. What is your current job title: _____

5. What is your current academic rank?
 - Assistant Professor
 - Associate Professor
 - Full Professor
 - Instructor
 - Adjunct
 - Other _____

6. What department do you teach in? _____

7. What college do you teach in? _____

8. What type of institution are you employed at?
 - Baccalaureate/Associate's college
 - Baccalaureate College- General
 - Baccalaureate College- Liberal Arts
 - Master's College and University- Type I
 - Master's College and University- Type II
 - Doctoral/Research University- Intensive
 - Doctoral/Research University- Extensive

9. How many years of teaching experience do you have at the college/university level?
_____ Full-time _____ Part-time

Appendix C: (Continued)

10. How many years have you been certified as an Athletic Trainer? _____

11. Undergraduate degree: BA BS BGS Other _____

Major: _____

Minor: _____

12. Graduate degree: MA MS MEd Other _____

Area of study: _____

13. Post-Graduate degree: PhD EdD Other _____

Area of Study: _____

14. How many college-level courses have you taken in education/pedagogy: _____
(Please include undergraduate, graduate, and post-graduate work)

15. How many workshops or educational sessions have you attended throughout your career that focused on pedagogical practices, improving teaching practices, or addressed other pedagogical issues? _____

Appendix C: (Continued)

Teaching Styles Inventory

Anthony Grasha (2002)

Instruction Sheet

This questionnaire is designed to assess aspects of your beliefs and behaviors in courses that you teach. In answering each part of the questionnaire, please try to be as honest and objective as you can when responding. *There are no correct answers to any of the items.*

To complete the attached instrument, you will need to select **one** of the core athletic training courses you teach and/or that you have taught in the past year as a frame of reference.

Course Information:

- Course Title: _____
- Primary level of course: _____ Freshman _____ Sophomore _____ Junior _____ Senior
_____ Graduate course
- On a seven point rating scale where a 1 indicates “I do not enjoy teaching this course” and a 7 indicates “I really like teaching this course,” how would you rate the extent to which you like teaching this course? _____

Appendix C: (Continued)

Teaching Styles Inventory

Respond to each of the items below in terms of how they apply to the course you selected. Try to answer as honestly and as objectively as you can. Resist the temptation to respond to each item in terms of what you think you “should or ought to think or behave” or in terms of what you believe is the “expected or proper thing to do.”

Use the following rating scale when responding to each item:

1	2	3	4	5	6	7
Strongly Disagree	Somewhat Agree	Neither Agree Or Disagree	Somewhat Agree	Strongly Agree		
Very unimportant Aspect of my approach To teaching this course				very important aspect of my approach to teaching this course		

- 01.) Facts, concepts, and principles are the most important things that students should acquire. _____
- 02.) In this course, high standards exist for the grades I give. _____
- 03.) What I say and do models appropriate ways for students to think about content issues. _____
- 04.) My teaching goals and methods address a variety of student learning styles. _____
- 05.) Students typically work on course projects alone with little supervision from me. _____
- 06.) I want students to respect my knowledge and expertise. _____
- 07.) Students receive a large amount of positive and negative feedback. _____
- 08.) Students are encouraged to emulate the example I provide. _____
- 09.) I spend a lot of time consulting with students on how to improve the work they are doing on individual and/or group projects. _____
- 10.) I seldom comment on the outcomes of discussions students working in small groups have on content issues. _____
- 11.) Students cannot obtain an adequate perspective on the topics covered without hearing what I have to say. _____
- 12.) Students might describe my standards and expectations as somewhat strict and rigid. _____
- 13.) I often give students examples of how and what to do in order to master course content. _____

Appendix C: (Continued)

Use the following rating scale when responding to each item:

1	2	3	4	5	6	7
Strongly Disagree Very unimportant Aspect of my approach To teaching this course	Somewhat Agree	Neither Agree Or Disagree	Somewhat Agree	Strongly Agree very important aspect of my approach to teaching this course		

- 14.) Small group discussions are employed in order to help students develop their ability to analyze issues and/or think critically. _____
- 15.) Students engage in self-initiated, self-directed learning experiences. _____
- 16.) My primary classroom role is as a transmitter of facts, concepts, and principles. _____
- 17.) I am in the best position to determine what content students need to learn. _____
- 18.) Examples from my personal experiences often are used to illustrate points about the material. _____
- 19.) I guide students' work on course projects by asking questions exploring options, and suggesting alternative ways to do things. _____
- 20.) Developing students' abilities to work autonomously is an important goal. _____
- 21.) Lecturing is an important part of how I teach each of the class sessions. _____
- 22.) Grades are employed as a tool to motivate students to learn. _____
- 23.) Demonstrations of various principles and concepts often are used in class sessions. _____
- 24.) Course activities encourage students to take initiative and responsibility for their learning. _____
- 25.) Students take responsibility for teaching all and/or part of some of the class sessions. _____
- 26.) My expertise is typically used to resolve disagreements about content issues. _____
- 27.) Very clear and specific goals and objectives were developed for this course. _____

Appendix C: (Continued)

Use the following rating scale when responding to each item:

1	2	3	4	5	6	7
Strongly Disagree	Somewhat Agree	Neither Agree Or Disagree	Somewhat Agree	Strongly Agree		
Very unimportant Aspect of my approach To teaching this course				very important aspect of my approach to teaching this course		

- 28.) Students are frequently given specific verbal instructions and/or written comments that illustrate how to improve their work. _____
- 29.) I actively solicit student input about how and what to teach in this course. _____
- 30.) Students set their own pace for completing course assignments during the term. _____
- 31.) Students might describe me as a “storehouse of knowledge” who gives them facts, principles, and concepts they need. _____
- 32.) Tests are used to keep students accountable and responsible for learning course material. _____
- 33.) By the end of the term, many students begin to approach content issues in ways that are similar to the way that I do. _____
- 34.) Students can make choices among activities to complete in order to meet course requirements. _____
- 35.) My approach to teaching is similar to a manager of a work group who delegates tasks and responsibilities to subordinates. _____
- 36.) There is not enough time in the term for me to present all of the content that should be covered. _____
- 37.) My standards and expectations help students develop the discipline they need to learn. _____
- 38.) Students might describe me as a “coach” who works closely with someone by providing information and feedback to correct problems in how they think and behave. _____
- 39.) Students would probably agree that I provide the personal support and encouragement they need in order to do well in this course. _____
- 40.) When a disagreement over a content issue occurs, I typically ask students to work alone and/or in small groups to resolve the issue. _____

Appendix D: Permission to use Teaching Styles Inventory

Appendix D: (Continued)

-----Original Message-----

From: ValTrainer@aol.com [mailto:ValTrainer@aol.com]

Sent: Saturday, November 05, 2005 1:54 PM

To: Laurie Richlin

Subject: Teaching Styles Inventory

Dr. Richlin-

Hello again, Dr. Richlin. I hope all is well with you. This is Valerie Rich again from the University of South Florida. I had spoke with you in early October requesting permission to use the Teaching Styles Inventory for my disseration research. Upon your request, I have attached my dissertation proposal and agree to submit a copy of my final research project to share the results with you. I am anticipating completion of this project by May of 2006. Please email me to let me know if I do have permission to use the Teaching Styles Inventory at your earliest convenience.

Sincerely,

Valerie Rich

Doctoral Candidate, University of South Florida

-----Original Message-----

From: Laurie Richlin <Laurie.Richlin@cgu.edu>

To: ValTrainer@aol.com

Sent: Tue, 8 Nov 2005 17:43:01 -0800

Subject: RE: Teaching Styles Inventory

You have my permission. I'm looking forward to your results.

Laurie Richlin, PhD

Director

Preparing Future Faculty
& Learning Communities Program

Claremont Graduate University

1263 N. Dartmouth Avenue

Claremont, CA 91711

909.607.8978 * fax 909.621.8270

laurie.richlin@cgu.edu

<<http://www.cgu.edu/pff>>

About the Author

Valerie Rich received her Bachelor's degree in Kinesiology with an emphasis in Athletic Training from the University of Northern Colorado in 1997. She attended the University of Nebraska at Omaha receiving her Master's degree in Exercise Science in 1999. Valerie completed an Athletic Training Fellowship program at the Steadman Hawkins Clinic in Vail, CO in 1999-2000. She became the Director of the Athletic Training Fellowship at the Steadman Hawkins Clinic immediately following her fellowship from 2000-2003.

She returned to graduate school in the fall of 2003 to begin work on a Ph.D. at the University of South Florida. Her doctorate is in Interdisciplinary Studies, Curriculum and Instruction. Her specialization areas were Higher Education and Research and Measurement. Valerie was awarded educational scholarships at the undergraduate, graduate, and postgraduate level from the National Athletic Trainers' Association. She has coauthored several publications and has presented several papers at regional and national conferences.