DEFINING AND ASSESSING ACADEMIC ADVISING FOR ATHLETIC TRAINING EDUCATION PROGRAMS

By

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The members of the Committee appointed to examine the dissertation of RUSSELL J. RICHARDSON find it satisfactory and recommend that it be accepted.

Chair

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Abstract

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The purposes of this study were to describe and analyze the perceptions of students enrolled in athletic training education programs about their academic advising experiences, to develop an electronic survey instrument for collecting data about those perceptions, and to use the collected data as part of the validation of the instrument. The instrument was developed based on a review of the literature in academic advising, athletic training, and Personal Investment Theory (PIT). This theory provided the lens to begin to examine, resolve, and address weakness in research and theory pertaining to academic advising.

Two hundred and fifty-eight randomly selected athletic training students representing 37 CAAHEP (now CAATE) accredited programs in the western United States were invited to complete the Student Survey on Academic Advising (SSAA). Eighty one percent of the students responded to the SSAA. The mean for each of the items on the SSAA ranged from 1.3 – 2.6 on a 5 point Likert scale indicating agreement. Generally, respondents indicated a favorable perception of their academic advising experiences. A factor analysis of the instrument identified

three factors: *Self*, *Behaviors*, and *Environment*. The three factors were consistent with the three components of the theory and accounted for 63 % of the total variance. The alpha reliability for the three factors demonstrated internal consistency with observed coefficients of .95 (*Self*), .95 (*Behaviors*), and .92 (*Environment*). Correlations between the three factors were calculated and provided evidence of covariation: *Self* to *Behavior* = .84, *Environment* to *Self* = .78; and *Environment* to *Behavior* = .83. The degree of observed overlap between the factors is consistent with PIT. The results of the data analysis obtained through this study provide increased knowledge and understanding for the role of academic advising in athletic training. In addition, the SSAA, based on Personal Investment Theory, is a statistically valid instrument by which assessment of athletic training students perceptions of their academic advising experience can be measured.

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This dissertation is dedicated to my incredible family who encouraged and supported me throughout this entire process. I also dedicate this dissertation to my colleagues and students at Whitworth University for teaching me so much about the topic of this dissertation. This has been an amazing journey.

CHAPTER ONE

INTRODUCTION

Athletic training as a program of study is a recent addition to the disciplinary offerings provided by American universities. Attracting numerous students, the discipline has gained credibility partly as a result of the popularity of American football. The severity and frequency of injuries associated with football has lead to the increased demand for skilled practitioners to care for and prevent injuries to those who compete in this physically demanding game. Another factor that continues to shape the profession is Title IX. The implementation of this legislation was instrumental in channeling resources and allowing women access to athletic programs as well as other educational opportunities previously denied (Prentice, 2008). Prior to Title IX, women's sport in America was limited to organized physical education classes with no opportunities for competitive intercollegiate participation (Durant, 2005). More opportunities for women in sport resulted in the need for additional health care practitioners.

Athletic training education is somewhat unique in higher education in that it requires students to complete rigorous academic coursework (didactic instruction) coupled with time intensive clinical experiences. In the 1990's students were required to complete 1800 hours of clinical instruction under the direct supervision of a certified athletic trainer. Because of the hour demands in an often high stress, emotionally charged environment, athletic training students develop significant, meaningful relationships with their professors (who frequently serve as their academic advisor) as well as the athletes that they serve (Riter et al., 2008). In 2004, the hour requirement in the clinical experience has been eliminated and replaced with delineated clinical

proficiencies and educational competencies. However, the complex interrelationship between the athlete, athletic training student, and instructor/advisor still exists. The importance of advisor mentoring and positive role modeling has a greater impact on the athletic training student than anything that is established in the formal curriculum, according to Weidner (2006).

Academic advising in athletic training programs is the topic of this dissertation. Chapter one contains the introduction to the study and is divided into five sections. The first builds the argument for the dissertation through discussion of important aspects of athletic training and academic advising to develop the background for the study. The second and third sections delineate the problem statement and research purposes. The fourth section provides an abbreviated version of the methods, which are fully explained in chapter three. The final section reports the significance of the study and an outline of the chapters to follow.

Background for the Study

Athletic training has been around as long as there has been athletics, yet it was not viewed as a credible profession until the 1970s when it was endorsed by the American Medical Association (AMA) as a legitimate, important, viable health care profession (Ebel, 1999). An important event that led to this recognition was the formation in 1950 of the National Athletic Trainers Association (NATA). NATA was created in order to meet the health care needs of an increasing number of intercollegiate athletes. At that time, NATA's membership consisted of mostly collegiate and a few professional athletic trainers. Support quickly grew within the association, however, to formalize the profession and develop curricula to prepare students for careers in athletic training. Curricular developments in the late 1950s resulted in the formation of athletic training education programs (ATEPs). Later, in the early 1970s, ATEP directors and

faculty, along with the leadership of NATA, designed, developed, and administered the first certification exam as part of the process for qualification and entry to practice. Certification was one of the defining events of the profession, which provided credibility to outside organizations such as the AMA.

Since the 1970s, the athletic training education has continued to evolve. The 1990s were marked by a series of major educational reform initiatives, and changes were implemented that significantly influenced the profession. These modifications included among others, the elimination of an internship (or apprenticeship) route to certification, institution and standardization of curricula, development of objectives- based clinical and didactic educational models, and formation of a research- based mindset influencing all aspects of the discipline (Delforge & Behnke, 1999; Ray, 2006; Weidner, 2006).

The instituted educational reforms also influenced ATEPs in ways that were not anticipated. One such outcome was the replacement of the internship model of clinical education with the combined didactic and proficiency- based model of instruction. Today, over 76 percent of athletic training educators and program directors transitioned from clinical practice to classroom- based instruction (Ray, 2006). Consequently, most athletic training educators possess little if any formal preparation on the teaching and learning enterprise and have received minimal guidance for academic advising (Weidner, 2006). Research on teaching and learning in ATEPs for both clinical and classroom settings have occurred to assess practices and facilitate improvement for student learning outcomes (Gould & Caswell, 2006; Harrelson, Leaver-Dunn, & Wright, 1998; Henning, Weidner, & Jones, 2006; Lauber & Wimer, 2004; Walker, 2006). Research is limited, if not void, as it relates to academic advising in athletic training. Consequently, research is needed to examine the quality and quantity of academic advising in

ATEPs as a supportive and interactional relationship between students and advisors is viewed as an essential component of the learning process (Gordon & Habley, 2000).

Lieger (1997), and more recently Mottarella, Fritzsche, and Cerabino (2004), argue that academic advising is a major factor contributing to students' academic success, retention, and reported satisfaction with their post secondary experience. Habley (2005) states that, "academic advising bears the distinction of being the only structured activity on campus in which all students have the opportunity for on-going, one-to-one interaction with a concerned representative of the institution, and this fact is a source of its tremendous potential today" (p. 1). Viewed as both teaching and service in the triad of the duties for faculty, especially at liberal arts colleges and universities (Ward, 2003), academic advising is considered by many as one of the most important responsibilities of faculty (Frost, 2000). Indeed, Frost notes that as higher education has become increasingly complex given the number of majors, diversity of students, and the availability of an incredible number of extracurricular (not to mention co-curricular) opportunities, the demand for more and better quality academic advising has followed. Consequently, academic advising has become an area of research with multiple and competing theoretical models to explain and guide university policy and advisor practice (Gordon & Habley, 2000).

Crookston (1972) and O'Banion (1972) are credited with being the first to attempt to define the complexities of contemporary academic advising. Their efforts were inspired by the political shift in the 60s and 70s and they theorized academic advising as having a specialized role within the context of the teaching and learning process (Frost, 1991). Prior to that period, academic advising was primarily considered prescriptive in nature (O'Banion, 1994). Kadar (2001) reports that the commonly accepted view of prescriptive (also referred to as traditional)

academic advising is that an assigned faculty member helps students to select courses that are applicable to the completion of a degree. Faculty advisors also approve registration forms and monitor academic records (Metzner, 1998). In contrast to this view of advising, Crookston (1972) and O'Banion articulated the developmental academic advising model, which has become widely accepted as the contemporary model that guides advising programs. Shelton (2003) describes developmental academic advising as attending to both the functional tasks and psychological needs of students. Developmental academic advising encompasses a shared, collaborative process that results in students' growth in relation to their personal, vocational, interpersonal, problem solving, decision making, and evaluative skills (Crookston; O'Banion).

Many of the models and theories as applied to academic advising have contributed significantly to understanding the complexities and activities involved in such undertaking. However, a dominant criticism of most of these models lies in their lack of consideration as to how environmental factors affect and influence student development (Evans, Forney, & Guido-DiBrito, 1998). Students' behaviors and institutional conditions are often highly complex and interrelated in ways that are difficult to interpret, let alone explain in meaningful ways (Creamer, 2000). Further research is needed to explore the manner, degree, and appropriateness of modifying developmental academic advising through stronger, more explicit identification and delineation of environmental influences.

Personal Investment Theory (PIT) identifies a theoretical framework from which to begin the process of examining, resolving, and addressing weaknesses in research and theory pertaining to academic advising. Originally developed by Maehr and Braskamp (1986), PIT offers a dynamic, multifaceted, choice, and decision making theory. Indeed, one of the major components of PIT is its articulation of the interconnected nature of self, behavior, and

environment. PIT's potential for providing a more holistic and integrated lens with which to measure the activities involved in academic advising than the current needs exploration.

Statement of Problem

Recent educational reforms in athletic training substantiate concerns regarding the void of information on student advising experiences and the deficit in faculty familiarity with advising. Academic advising is credited with contributing significantly to positive student outcomes including learning, retention, and graduation. Nevertheless, disagreement and questions are evident given competing theoretical models and concerns over the treatment of environmental influences for understanding, measuring, and assessing this work for university students in general and for those enrolled in athletic training in particular. Indeed, no instrument in use adequately addresses the environmental influences on student development given the frameworks on which they are based. Therefore, research is needed to develop and validate a survey instrument that includes environmental influences and can be used to examine the nature of academic advising as perceived by students in athletic training programs.

Research Purposes

The lack of knowledge and understanding of the complexity of academic advising in athletic training coupled with an inadequate research base contributed to the purposes for this dissertation. The first and primary purpose of the study was to describe and analyze the perceptions of students enrolled in ATEPs about their academic advising experiences. This included the development of an instrument for collecting data on student perceptions of academic advising. A sample of students enrolled in ATEPs in the Western United States accredited by the Commission for the Accreditation of Athletic Training Education (CAATE –

formerly CAAHEP) was surveyed using the instrument developed for this purpose. Development of this instrument was based on a review of literature on academic advising, Personal Investment Theory (PIT), and athletic training. Through the review of literature, the attributes, activities, practices, roles, etc. identified in research and theory contributed to the generation of items for the survey instrument. Erwin (1991) stated that poor operational definitions and failure to maintain accuracy or compatibility to the underlying theory were common errors evident on too many academic advising surveys. Attention was given in the review to careful identification of advising models and definitions that can serve to inform the development of a meaningful instrument. The second purpose for this study was to utilize the collected data from the survey to provide the validation of the instrument. Specifically, an exploratory factor analysis will be used to examine the manner and degree to which these data support or challenge the academic advising framework modified using PIT. Factor correlations and alpha reliabilities were included as part of the instrument assessment procedure.

Methods

In order to achieve the purposes of the study articulated above, 258 randomly selected athletic training students enrolled in the 37 CAAHEP accredited ATEPs located in the Western United States were invited to participate in a survey titled the Student Survey on Academic Advising (SSAA). The sample size reflected guidance provided by Krejcie and Morgan (1970) for determining representative samples. Eighty one percent of subjects responded to the survey, which was sent electronically through the Center for Teaching and Learning Technology at Washington State University. The items on the SSAA were constructed given a review of literature, which begins in the background for the study provided in this chapter and is completed in the next. The survey procedures employed in the study conform to guidelines detailed by

Dillman (2000). Descriptive statistics were used to analyze the collected demographic data about respondents and their item scores aggregated for the sample. Further, exploratory factor analysis was performed using the procedure of principal component analysis computed using Quartimax rotation to produce a three factor solution. Factor scores were calculated for each respondent and then aggregated for the sample as a whole. The results were interpreted through drawing comparisons to theory and findings provided in the review of literature.

Significance and Outline

The purposes of this study seek to promote understanding and improvement of academic advising in ATEPs. Currently, anecdotal information governs the direction, flow, and makeup of conversations between colleagues about advising, particularly when faculty members are located at different institutions. Although some institutions do systematically collect and report limited data on student advising, findings generally are not easily or accurately comparable across programs given the lack of standardization in questions and responses. Further, even within the institution, student data on advising is usually aggregated at department and college levels, which reduces their utility in assessing practices and guiding improvements at the level of programs.

The findings reported in this study about the nature of academic advising, as well as the developed and validated survey instrument, can be used to strengthen ATEPs in a number of ways. The description and analysis of student perceptions of academic advising provide metrics for assessing advising practices in the discipline. Indeed, the collected data reflect student experiences gathered from a randomly selected and representative sample. The results can be used to identify particular strengths as well as needs given the ratings students provided on the SSAA. Further, ATEP faculty and directors can use the SSAA to collect data on academic

advising for their students and can compare these findings to those provided by this survey. The findings from this study may offer guidance on establishing measurable objectives in the area of academic advising. Data collected for the dissertation can be understood as providing a standard or baseline against which comparisons may also be made. Finally, these data and the instrument provide a baseline and tool for which to engage in further study of academic advising.

Considering that academic advising is developmental for the student and evaluative for the professor (advisor), an appropriately designed, constructed, and validated instrument to measure student perceptions of academic advising may increase attention to these issues and improve success of students entering athletic training through clarifying the expectations for academic advisors. Brown (2005) states, "that which is valued gets recognized, rewarded, and evaluated" (p. 6). Assessment of academic advising increases the value and expectations for quality and at the same time increases awareness of the role and responsibility of faculty advisors. Only time and further research can reveal these possibilities.

An outline of the remaining chapters included in this dissertation is provided below. Chapter two, the literature review, is organized around the following topics: the importance of academic advising, definitions and models of academic advising, types of academic advisors, characteristics of academic advisors, theoretical frameworks to understand academic advising, issues and concerns related to advising, and assessment of academic advising. In addition, the literature review provides contextual information about what we know about athletic training, athletic training students, and today's millennial student. Research describing academic advising continues to grow. The result of much of that research has provided us with invaluable information that contributed to the foundation of this dissertation.

Chapter three provides a description of the methodology used to carry out the study. Specifically, the chapter offers the procedures followed in developing the Student Survey on Academic Advising (SSAA), a complete depiction of the SSAA, and an explanation of the instrument's administration. Sampling issues are also explained, including the sampling design and sample size. Ethics are included in the chapter. Finally, data analysis is discussed.

Chapter four reports the findings from the analysis of collected data from the sample. The chapter begins with a descriptive analysis, which reports demographic and institutional information about the respondents. The descriptive analysis also includes a thorough presentation on how subjects responded to questions on the instrument. The results of the factor analysis are explored. The chapter concludes with a summary of key findings.

Finally, the dissertation concludes with chapter five. In this chapter, a discussion of the practical, substantive, and theoretical significance of this study is provided. The limitations of the research will be described as well. An agenda for future research will also be introduced.

CHAPTER TWO

LITERATURE REVIEW

Researchers have identified and developed an extensive literature pertaining to academic advising for students in post-secondary institutions. The review of literature, which began in chapter one with the background for the study, is continued in chapter two. Although there may be some overlap between the materials covered in both chapters, an effort was made to reduce such redundancies. Chapter two is organized around several themes: definitions, models, and theories relevant to academic advising; the importance of academic advising; types of academic advisors; students and athletic training; and assessment of academic advising. The chapter is divided into sections that address each of these aforementioned themes. The chapter concludes with a brief summary.

Definitions, Models, and Theories Relevant to Advising

The purpose of the National Academic Advising Association (NACADA) "is to promote the quality of academic advising in institutions of higher education, and to ensure the educational development of students." Although NACADA embraces such purpose, it has not been able to identify, delineate, nor agree on a definition of academic advising. To date, the task force appointed by NACADA to the monumental task of "studying the comprehensive and complex task of defining academic advising" (NACADA, 2004) has yet to complete its assignment. It is not surprising that academic advising is difficult to define. By its very nature, academic advising is a dynamic and highly social process. According to Lynch and Stucky (2000), over 90 percent of the academic advisors' contact with students is interactional. Effective advisors enter a dialogue in an advising relationship that results in developing professional relationships contributing to the student's success. Because of its interactional and relational nature, advising

is exceedingly complex, somewhat ambiguous, and very difficult for professionals to agree on a unified definition.

A number of definitions and resulting models have been developed by various scholars as attention to academic advising has increased. Previously noted, Crookston (1972) and O'Banion (1972) were credited as being the first to define contemporary advising. Crookston first defined advising using the terms traditional or prescriptive. This type of advising was based on the authority of the advisor to solve problems that had been identified by the student. The hierarchical, one way nature of the advising relationship typically focused on scheduling courses and completing degree plans rather than dealing with more complex developmental issues (Gordon & Habley, 2000). Traditional academic advising defines the role of the assigned faculty advisor as assisting with academic planning. However, not all advising is provided by faculty advisors. Both Professional (staff) and Peer advising programs are common in higher education today. Further discussion of the types of academic advisors occurs later in this chapter. The advisor provides curricular planning and helps to interpret institutional academic policies. The traditional academic advisor serves as a referral source for other institutional services (Davis & Cooper, 2001). All advisors still use some degree of prescriptive advising in their advising process, yet it is widely accepted that prescriptive advising is an inadequate approach in developing today's students (Lowenstein, 2005).

The critical assessment of the prescriptive model as incomplete and inadequate pushed Crookston (1972) and O'Banion (1972) to redefine advising based on their understanding of the relationship shared by both the student and the advisor as well as to incorporate notions based on Chickering's psychosocial theory of student development (Gordon & Habley, 2000). They posited in their developmental models that Chickering's seven vectors of developing self

provided a theoretical framework. Specifically, they envisioned academic advising as a relationship where faculty challenged students to grow and to develop skills relevant to their interpersonal, social, behavioral, problem solving, and critical thinking (Evans et al., 1998). Developmental academic advising changed the nature of the advising relationship from a monologue to a dialogue and is the foundation for most advising programs today (Lowenstein, 2005). Further clarification of the developmental advising definition was provided by Winston, Edners, and Miller (1984). In particular, they described this kind of advising as:

> a systematic process based on a close student-advisor relationship intended to aid students in achieving educational, career, and personal goals through the utilization of the full range of institutional and community resources. It both stimulates and supports students in their quest for an enriched quality of life. Developmental advising relationships focus on identifying and accomplishing life goals, acquiring life skills and attitudes that promote intellectual and personal growth, and sharing concerns for each other and for the academic community. Developmental academic advising reflects the institution's mission of total student development and is most likely to be realized when academic affairs and student affairs divisions collaborate in its implementation. (p. 19).

Crookston (1972) coined the phrase, "advising is teaching" to help to illustrate the developmental nature of the advising relationship. That mantra is widely used today and can even be seen on bumper stickers provided to NACADA members. However, Crookston provided minimal insight or description for what the phrase, "advising is teaching" really means (Lowenstein, 2005); yet, that phrase is at the very core of what most experts believe is developmental academic advising. Others building off this model, for example, Kramer (2003) most notably, provide new insight on the "advising is teaching" concept. He encouraged the

development of an academic advising syllabus. Included in the syllabus (similar to a course syllabus) were the following educational objectives:

> 1) engage the student; 2) provide personal meaning to students' academic goals; 3) collaborate with others or use the full range of institutional resources; 4) share, give and take responsibility; 5) connect academic interests with personal interests; 6) stimulate and support student academic and career planning; 7) promote intellectual and personal growth and success; 8) assess, evaluate, or track student progress; and 9) establish rapport with students. (p. 6)

Others, however, have been critical of Crookston's "advising is teaching" idiom. Lowenstein (2005) asked, if advising is teaching, then what do advisors teach? He further questioned, what do students learn? Rooted in a paradigm of teacher-centered rather than student-centered approach, Lowenstein's skepticism of the developmental academic advising model exposed its lack of attention to key issues associated with academic affairs. His work has facilitated the movement toward a learning-centered approach to advising, which focuses on the core goal of enhancing student learning. Indeed, he stated that if an objective of higher education is student-centered learning, then a learning-centered advising definition needs to be at the core of understanding academic advising. The result of this argument is a student-centered learning environment notion of advising where students are encouraged to combine fragmented pieces of previously learned material (from classes as well as life) into an integrated, cohesive worldview. This process empowers students to be lifelong learners and serves as the foundation for how they organize and think about almost every situation they might encounter.

Other scholars have also pushed the student development model using insights and arguments that are less confrontational to its theoretical tradition. Kadar (2001) defined developmental academic advising as a process that enhances student growth by providing information and an orientation that views students through a human development framework. The emphasis in the model directs advisors to both its goal-centered and student-oriented framework and focus on developing the whole person. Although, the heart of developmental academic advising remains firmly centered on Chickering's seven characteristics for students' social, psychological, and intellectual development. Those characteristics are designed to allow students to develop competence, autonomy, interpersonal relationships, purpose, and integrity as well as manage emotions and establish identity (Evans et al., 1998). Students indicate that they prefer the developmental approach to the traditional academic advising approach partially because there is a shared responsibility between the student and the advisor (Davis & Cooper, 2001).

A more recent modification to developmental academic advising is witnessed in proactive academic advising. It was specifically designed to promote the academic success and increase retention for students of color (Shultz, Colton, & Colton, 2001). This model requires student participation in intentional activities structured to prevent students from withdrawing from school. An example of proactive academic advising requires students to attend mandatory weekly meetings as well as participate in frequent high quality interactions between the student and their advisor. Proactive academic advising has been found to result in higher academic and retention outcomes than traditional academic advising for at- risk students.

Academic advising, as noted above, as a field of study has been influenced by several theories. Most of these theories originate in the student development literature. Student

development theory originated from the disciplines of psychology and sociology. Those disciplines provided a scientific alternative to the theological Christian moral character model that had provided the original framework for understanding student growth during their college years. World renowned psychologists such as Freud, Jung, and Skinner were credited with establishing a different lens by which behaviors could be examined especially in relation to individual psychological differences and vocational choice decisions (Evans, et al., 1998). Student development theory is used to provide a lens by which to explain complex human interaction. These theories are useful in predicting student behavior and provide understanding as to why people interact in the ways that they do.

The student development theories that have had a major influence on academic advising are generally divided into three categories. They are the psychosocial theories, cognitive structural theories, and typology theories. It is virtually impossible to attempt to categorize student behavior under one comprehensive model; each of the definitions and models as well as its associate theory possesses particular strengths as well as inherent weaknesses. Each of the three schools of thought will be briefly discussed to expose basic assumptions as well as their noted theorists.

Psychosocial theory was influenced by the research of Erik Erikson. He described psychosocial development as "a sequence of developmental tasks or stages confronted by adults when their biology and psychology converge and qualitatively change their thinking, feeling, behavior, valuing and relating to oneself" (Chickering & Reisser, 1993, p. 2). Arthur Chickering's work is the most widely cited psychosocial theorist. He continued the work of Erikson by describing the seven vectors of development that form one's identity. Other models have contributed to the work of Erikson and Chickering by examining the developmental

experiences of women as well as diverse student populations (Evans et al., 1998). In addition to Erickson and Chickering, Keniston's (1971) psychosocial writings have contributed much to discussions on academic advising (Evans et al., 1998).

Cognitive structural theories originated in Piagetian psychology and attempt to differentiate the changes in the way that people think rather than examine what they think. Piaget described the process of intellectual development as how people think, reason, and make meaning of their experiences. Building on Piaget, Perry (1968) developed the cognitive structural theory known as Intellectual and Ethical Development Theory to describe and understand the meaning making process using nine "positions" to describe the developmental change in students. Later cognitive structural theorists include Gilligan, Kohlberg, King, Kitchener, Magolda, and Belenky. These scholars have further defined, refined, and developed theories to understand moral development from multicultural and gendered perspectives (Evans et al., 1998).

Typology theories originated from the work of Carl Jung and were employed by scholars such as Myers, Briggs, Kolb, and Holland. These theorists attempted to identify factors that consistently described how students cope with life changes. Typology theories are generally non-evaluative and stress that uniqueness and individuality are important characteristics for a healthy community (Evans et al., 1998).

The models and theories as applied to academic advising have offered much to further understand students' growth and development. The more we know about student's development, allows us to develop purposeful programs that contribute to their success and academic development. Cumulatively, the previous theories provide a wealth of knowledge about how

students understand and develop the concept of self, as well as how student behaviors may be understood. However, a dominant criticism of most of these models lies in their lack of consideration as to how environmental factors affect and influence student development (Evans et al., 1998). Personal Investment Theory (PIT), originally developed by Maehr and Braskamp (1986), offers a dynamic, multifaceted, choice, and decision- making theory that may be of use and relevance to academic advising. PIT is essentially a cognitive theory that originated out of motivational theory. Motivation can be described by the behavioral patterns associated with the choices and decisions made by people. When individuals choose to take a specific course of action, they do so based on the meaning that their choice has in response to their thoughts, perceptions, purposes, and goals.

Linking meaning and motivation, PIT pays particular attention to "what one does" and the manner in which behavior, cognition, and context are interdependent. The dynamic nature of meaning and motivation can be illustrated through the use of a Venn diagram presented in Figure 1 below, which shows the intersection of (a) one's sense of self, (b) one's social culture and environment, and (c) patterns of behavior or engagement. The circles of the diagram represent permeable spheres, rather than distinct boundaries. Further, the interplay is posited as constantly evolving. Additionally, the degree of overlay between these components indicates the level or degree of their integration. Too much overlap may not be healthy for individual growth. Inadequate overlap may indicate gaps in recognition, understanding, and application.

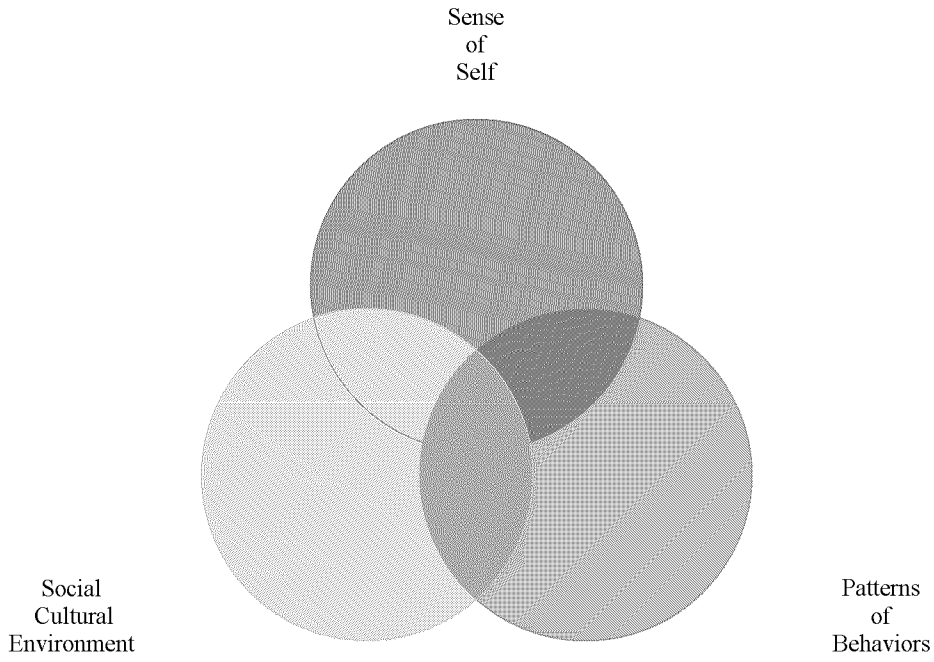
The three components and the interpretation forwarded about their interconnectedness can be applied directly to academic advising. "One's sense of self" draws attention to a student's notion of self identity and image as demonstrated through personal goals, sense of purpose, and perceived opportunities. PIT as a theory of advising takes seriously and makes explicit notions

about development of self identity for students in the context of academic advising The second component describes a student's social culture and environment. In this way, issues related to the curriculum, co-curricular activities, colleagues, and community are brought forward. PIT includes this in its framework and as such provides strength over previous models of advising. Patterns of behavior, also known as student engagement, comprise the third component. This category examines how students spend their time. As such, application of PIT improves understanding for how students' motivation clarifies the investment of their time, talents, and energy as evidenced by behavioral patterns over previous theories applied to advising. Braskamp, Trautvetter, and Ward (2006) state that careful analysis of the interrelationship between those three factors can contribute to our understanding of the role of academic advising for students and can potentially be a predictor of student success, helping to formulate purposeful educational activities.

Personal Investment Theory was chosen as the framework for this dissertation because of its holistic ability to describe how students develop sense of self, and how one might understand student behaviors, and also considers the context of the social culture and environment that students learn in. This lens provided the researcher with the ability to view academic advising holistically through one theory of understanding that is a clear, concise, and elegant. PIT affords a framework that describes and explains the highly complex, inter-relational nature of an advising relationship. Further arguments for the importance of self, behaviors, and environment in academic advising are evident in the next section.

Figure 1.

Venn Diagram of Personal Investment Theory's Three Factors



Importance of Academic Advising

Despite the lack of agreement on a definition of advising and proliferation of models, few argue about the benefits of advising that accrue to students when it is done well. In this section of the chapter, several of the important features of advising and student outcomes identified in the literature will be presented. To begin, Davis and Cooper (2001) reported that academic advising is the only structured service on college campuses that guarantees student interaction with a representative of the institution. The purpose of their interaction is to build connections between the student, faculty, and the curriculum in ways that encourage a meaningful, holistic educational experience for the student. Advisors also assist in directing students to other essential services like financial aid, career center, skills center, counseling services, and student life. As such, academic advisors have been described as the hub of the academic wheel.

Oehlkers and Gibson (2001) state that the academic advisor is usually the first personal contact experienced by the student and is typically the longest lasting institutionally authorized relationship with the student. Academic advisors have been found to also provide academic assistance with courses and teach study skills. The academic advisor in some disciplines, such as those in affiliated health care, is also involved in facilitating student preparation for licensing exams. Lau (2003) states that effective academic advising consists of an ongoing process involving positive reinforcement and regular interaction from enrollment to graduation and beyond.

Shultz, Colton, and Colton (2001) report "quality interaction with faculty seems to be more important than any other single factor in determining minority students' persistence" (p.

212). Although academic advising is commonly done by faculty members, professional advisors are also charged with providing advising services in many institutions. Both faculty advisors and professional advisors agree that persistence is one of the strongest factors for predicting academic success for minority students, or at- risk populations (Hesser, Pond, Lewis, & Abott, 1996; Braxton, Hirschy, & McClendon, 2004; Shelton, 2003). Persistence is an example of a behavior evidenced by students in an advising relationship. If the student is engaged (or persistent) then they have a greater degree of achieving academic success than a student that is disengaged (or lacks persistence). Metzner (1989) indicates in his research on academic advising and attrition that low quality academic advising related to greater student attrition while high quality academic advising contributed to greater student retention. In fact, the most frequently recommended intervention to increase retention involves increasing the quality of the institution's academic advising program. Shelton (2003) determined that students who participated in mentored, academic advising programs increased their GPA's and were less likely to withdraw from college. Shelton attributed this outcome to the function that academic advisors played in helping students to identify and overcome problems and obstacles to their learning.

How the academic advisor creates and environment that encourages student persistence (i.e. ability to identify and overcome problems and obstacles) is important in understanding students behaviors. If the climate (environment) is supportive and provides adequate challenge for the student, behaviors that contribute to how one develops their sense of self are evident (Sanford, 1967). Conversely, if the relationship (formed in part by the environment, culture, or climate) between a student and their advisor is not conducive to achieving appropriate levels of "challenge and support" then behaviors (i.e. lack of student commitment) may become evident. Striking the appropriate level of challenge and support may be a key indicator to predicting

success in the advising relationship. Attaining the balance between challenge and support may be one of the greatest challenges in the advising relationship yet may have the most profound impact on determining the success of this dynamic interaction (Sanford, 1967).

The influence of academic advising does extend beyond improvement in student learning and graduation rates. Academic advisors have also been found to contribute to a student's sense of competency and self-worth (Lau, 2003). It appears that no group of students is exempt from these benefits, although seniors have been found to prefer informal academic advising as opposed to the more intentional or formal process desired by freshmen (Kuo et al.,2004).

Davis and Cooper (2001) reviewed research on the characteristics of academic advisors that students and faculty identify as important. Their work suggests a lengthy laundry list of qualities, including the advisor being nurturing, focused, interested, engaging, fair, available, flexible, creative, motivated, hard working, generous, friendly, supportive, knowledgeable, organized, and honest. Academic advisors with these attributes were viewed as better able to link student goals and encourage their academic success. Furthermore, these traits were argued to facilitate the work of bridging the curriculum, facilitating career planning, and establishing a bond between the student and the institution (Metzner, 1989). Such attributes would be appropriate given the go-to-person role Oehlkers and Gibson (2001) identified as a key role of advisors. Shelton (2003) noted that advisors should be problem- centered and serve as a buffer between the student and the institution. Effective academic advisors are portrayed as being available, able to clearly communicate reasonable expectations, provide fair evaluation, and serve as professional role models. Academic advising includes sharing time, expertise, and experience with students. Given such findings about the importance of advising, others besides faculty have been brought into the enterprise.

Types of Academic Advisors

Literature has identified three groups of people responsible for the delivery of academic advising services (Gordon & Habley, 2000). They include faculty, professional advisors (aka staff advisors), and peer advisors. The following section will discuss each of these three types of advisors. Each of these groups brings unique characteristics and strengths for the delivery of advising services. In the same way that the definition of advising has evolved, the delivery of those services has also evolved. Some may describe this change as the "professionalization" of advising. In fact, Kansas State University recently developed a master's degree program in academic advising. The purpose of that program is to prepare professionals to study and further develop the professional discipline of academic advising for post secondary education. This program is the first of its kind in American higher education.

Faculty Advisors. Faculty have been at the core of advising in the American university since its conception. Habley (1995) shares, "faculty advising is a) a constant in the history of American higher education, b) the predominant method for delivering advising services, and c) a critical factor in both student success and institutional effectiveness" (p. 12). He notes that in the early history of American higher education, faculty-student advising relationships were informal and lacked organization and intentionality. In 1877, Johns Hopkins University implemented what is believed to have been the first system of faculty advisors.

Over the past century, the complexity of higher education has increased. For example, post-secondary education in the United States consists of several thousand institutions each defined by several of the following attributes: public, private, liberal arts, land-grant, community, parochial, research, technical, etc. Each institution has developed its own identity or culture

based on its mission and population served. The role of faculty across these various organizational types is unique but shared in many ways. Formalization of the professorate has centered faculty duties and responsibilities on scholarship, teaching, and service (Bringle, Games, & Malloy, 1999). Trends in educational policy and public pressure have also influenced the work of faculty toward greater conformity. Current assessment and accountability reforms are redefining higher education. And yet, Boyer and other reformers are calling for faculty to recommitment to the mission of higher education and recreate or retain their focus on the work of teaching and learning (Bringle et al., 1999).

Public pressure on many institutions of higher learning has resulted in higher expectations, particularly in the teaching productivity of their faculties (Milem, Berger, & Dey, 2000). However, pressures have also increased demand for scholarship evident in writing research articles and grant proposals (Meyer, 1998). The result of these pressures are manifest in faculty members spending more time conducting research and devoting less time to duties associated with academic advising (Milem et al., 2000; Meyer, 1998; Ward, 2003).

Further compounding this situation are problems rooted in faculty promotion and tenure. Ward (2003) indicates that the product of good academic advising is often unseen. It is difficult to document advising effectiveness in a file for tenure or promotion. Indeed, many universities have no means by which to document, evaluate, or improve the quality of academic advising being performed by faculty (Metzner, 1989). Additionally, the faculty reward system in higher education rewards research and scholarship at a disproportionate level to that of teaching and service (Bringle et al., 1999). Consequently, the duties of faculty have increased significantly, yet the recognition and reward for academic advising has remained relatively unchanged and feeble (Habley, 1995).

Finally, professors that have good reputations as academic advisors are thought to have more advisees. Logically, this would diminish the time available for teaching and scholarship, the other primary categories for evaluation and promotion. Such an outcome, either real or perceived, contributes to the understanding that advising is an unwanted duty, done by ill-prepared faculty members (Grupe, 2002; Yarbrough, 2002). Not only is advising an increasingly unpopular task, it is also becoming more complex. The more diverse student population, which will be discussed in greater detail later in the chapter, as well as almost limitless curricular and co-curricular opportunities, has resulted in student demand for more and better academic advising services (Frost, 2000).

The combination of reform pressure, poor reward structure, and increased complexity act to discourage strongly faculty from investing heavily in advising but rather put their energy in research and scholarship. Researchers find that faculty members are spending less time advising students than they have in the past (Habley, 2004; Knight, 2003). These tensions in the professorate are seen as reinforcing or exacerbating public criticism of American higher education (Knight, 2003). The decreased time with students lends credence to perceptions that faculty members are not student- centered, contributes to a perception of institutional hypocrisy and undermines what faculty members are doing for students.

Educators state a desire to create an educational environment conducive to student success, despite the challenges inherent in the academy that fail to reward or support members of the faculty as described above. Work is in progress in higher education to address these policies, practices, and perceptions. For example, Knight (2003) has developed a model by which faculty participate in learning communities with undergraduate students. These communities, underpinned by extensive academic advising programs, have provided evidence to counter public

criticism of the shortcomings of higher education. And another example is offered by Sun, Valiga, and Gao (1997) who advocate using student evaluations of academic advising effectiveness as a component of the tenure review process that will meaningfully impact decisions concerning tenure and promotion.

Faculty members remain principal institutional players responsible for delivery of advising services despite what some define as dramatic change in their roles and responsibilities. As a result, faculty members are spending less time advising students than in the past. Most recently, faculty advisors reported that between 5 – 10 percent of their time is dedicated to advising (Habley, 2004). Yet, it is estimated that they provide 75 percent to 90 percent of all advising (Waters, 2002). Private universities utilize a faculty- only model of delivery at a rate significantly higher than public institutions. Seventy-eight percent of faculties in all academic disciplines are required to advise, regardless of institutional type. Waters further claims that advances in faculty advising training and assessment will contribute to further strengthening of the faculty advisor delivery system. The professoriate, however, will share this work with other institutional representatives given its importance to achieving student learning and success.

Professional Advisors. Over the past twenty years, there has been a dramatic increase in the number of full-time professional advisors. They are typically housed in either centralized advising offices or departmental advising centers. Nearly 80 percent of campuses utilize some form of professional advisor delivery system (Habley, 2004). Advising centers are more frequently located in large, research institutions. In many universities, the professional advisor works in collaboration with the faculty advisor delivery system. Professional advisors are frequently hired to provide service to specific populations such as continuing studies students, first generation students, and at- risk student populations. An advantage of the professional

advising model is that advisors typically have formal training, a professional orientation to the involved duties, and work experience in student service related disciplines (Gordon & Habley, 2000).

Since professional advisors are hired specifically for the purpose of advising students, they do not report having the multiple competing expectations of scholarship, service, and teaching associated with a faculty position. Professional advisors that are housed in student service centers, rather than academic departments, risk being viewed as less credible as they are not placed nor perceived to be connected with the core of the academic enterprise (Waters, 2002). And yet, students have benefited from development of an advising code of ethics that has arisen with the professionalization of advising. That code is in response to the recognition that some aspects of the advising relationship are comparable to the skills of professional counselors. Although academic advising requires developing skills in effective counseling techniques (Kadar, 2001), academic advisors are not trained counselors. Talbot (2000) cautions that the counseling techniques used by academic advisors blur the line of distinction between counseling (therapy for mental illness) and guidance (academic advising). Because there were no formal codes of practice for academic advising in higher education, and because academic advisors typically have minimal formal training, extreme care is required to not cross ethical boundaries.

Regardless of the type of delivery (faculty or professional), there is no reported significant difference in the rate of individual contact with students. Over 90 percent of academic advisors' contact with students is interactional in nature (Lynch & Stuckey, 2000). A primary difference between professional and faculty advisors is the amount of time that they allocate to advising appointments. Professional advisors report a greater incidence of advising appointments of 15 minutes/student or less. Faculty advisors indicate a high incidence of advising

appointments lasting 30 – 45 minutes per student or even longer (Habley, 2004). Habley states that this is not surprising in that the faculty advising delivery models are more commonly associated with private liberal arts colleges and universities. Faculties at those types of institutions typically advise an average of 35 students each. At larger, research- based, public institutions professional advising staffs are responsible for 350 to as many as 500 advisees per advisor.

Peer Advisors. A relatively recent addition to the advising delivery system has included peer advisors. These advisors are often upper division students within a specific academic discipline or graduate students affiliated with the department (Gordon & Habley, 2000). Students report a high degree of satisfaction with peer advisors (Diambra & Cole-Zakrzewski, 2000). This may be in part the result of the relative proximity in the age of the peer advisor to the student advisee. Students indicate that they are more willing to discuss issues and concerns with a peer advisor rather than a faculty advisor who may be teaching courses the student is enrolled in (Diambra & Cole-Zakrzewski, 2000).

Peer advising programs are often used in fall orientation programs, freshman advising programs, or with departmental related clubs and organizations. In order for peer advising programs to be successful, an adequate training program is essential. Peer advisors run the risk of providing inaccurate information and therefore require appropriate supervision (Diambra & Cole-Zakrzewski, 2000). Peer advisors are used most commonly in four-year public institutions and are designed to support the work of a faculty advising delivery system (Habley, 1995).

Understanding Today's Students and Athletic Training

This section of the literature review attempts to illuminate some of the complexities experienced in describing and understanding students and more specifically athletic training students. The section is organized around the following sub-categories: NACADA and its efforts to describe and identify characteristics of today's student population; a broad, general description of the Millennial generation; and a description of what we know about teaching and learning in athletic training education.

Whatever changes are or will be made in the design and delivery of academic advising, they must be responsive to the transformation that is occurring in post-secondary student enrollments. No longer can students be identified and categorized in one or two groups (i.e. student's gender or student's ethnicity) as they were in the past. The National Academic Advising Association (NACADA), recognizing the diversity of students, has created focus groups to identify and discuss their unique needs. Table 1 offers a list of the various groups. Consequently, a one size fits all approach to academic advising needs to be challenged and reconsidered. Today's student has unique advising needs that are shaped by who they are and their life experiences.

Table 1.

NACADA Focus Groups

Advising First Year Students	Advising Transfers
Advising High Achieving Students	Advising Students of Color
1st Generation College Student Advising	GLBTA Advising
Advising Adult Learners	Health Profession Advising
Advising At Risk Students	Advising Liberal Arts Students
Advising Student Athletes	Advising Students with Disabilities

First generation students are attending college at an unprecedented rate (Braskamp, 2006). Further, Gordon and Habley (2000) discuss how within the ranks of students today there are a large number of displaced workers, who have entered college for retooling and retraining in order to attain a better life. These are older and experienced students with families to support. Students are also observed to drop in and out of college. There are multiple ways by which these students access higher education, including online to studying abroad courses, programs, and degrees.

Emerging research has identified that special care and training is essential in order to effectively advise students from the various groups (Shultz et al., 2001). For example, minority students often report difficulty in seeking academic assistance. They indicate that they feel

ashamed when they are having academic difficulties or need additional help (Hesser et al., 1996; Shultz et al., 2001). As more evidence is presented, specific strategies to meet the needs of this population will need to be addressed, which is part of the reason behind NACADA's focus group strategy.

Millennials is another label that has received growing attention in the literature to describe students today (Keeling, 2003). The use of the term "Millennials" is a term identified in generational research. This type of research is quite controversial in that it uses broad generalizations to describe the characteristics of a specific generational group. Caution should be used when using this type of information to understand large groups like today's undergraduate students. Nevertheless, Monaco and Martin (2007) state that in order to achieve effectively the educational outcomes in athletic training, faculty members must understand Millennials and be willing to engage these students both inside as well as outside the traditional classroom. Monaco and Martin note that a vast majority of students enrolled in athletic training education programs are Millennials.

The Millennial generation as a group was generally born between 1982 and 2002 (Keeling, 2003). This generation developed as the result of the corrective response to the negative attributes and characteristics of the Baby Boomers. Millennials are described as ambitious, yet without a plan. Keeling argues that the majority of this group has unrealistic expectations with ill-informed life plans. They are the product of a healthy economy that has resulted in significant family wealth. As a group, they are the highest educated, most ethnically diverse generation. Generally they have a positive, enthusiastic outlook on life.

Scholars have identified seven characteristics that they attribute to members of this generation. First, members of this generation tend to believe that they are special. They have been raised by hovering, also referred to as "helicopter parents." These parents are highly involved in the education of their child and contribute significantly to the students' sense of entitlement. Second, members of this student group have been sheltered. For most Millennials, parents have organized, structured, and facilitated almost every aspect of the Millennials' life. Most Millennials have been so over-scheduled that they live hectic lives with minimal free time. Consequently, these students struggle with independent thinking and critical problem solving skills. Third, more than any other generation, Millennials tend to be team- oriented. They prefer group activities and collaborative projects and resist working independently. The group dynamic allows the group to experience a collective success, eliminating the fear of individual failure. Fourth, confidence is a hallmark of the Millennial student. That is surprising considering their desire for group work (in order to protect from individual failure). They are generally positive and driven, yet often without a plan or direction to attain their dreams. Their confidence is bolstered by their ability to multitask using multiple forms of technology. This generation is comfortable with total access to multiple forms of information (including each other) at any time of the day. For Millennials, they do not consider it unreasonable to send text messages or instant messages to professors in the evening and/or weekends and expect instant responses. Email is considered an outdated mode of communication by most Millennials because of the delay in receiving responses. They desire immediate feedback, and when they do not receive it they experience great frustration. Fifth, students of this generation feel pressure. They desire to perform well, not necessarily for themselves but in order to please significant others (typically parents). It is common for parents of Millennials to pick their child's major as well as approve

their course schedule prior to registration. "By being pressured, Millennials are a generation that yearns for feedback. They thrive on constant feedback and become paralyzed, often unable to proceed forward, without feedback and direction" (p 43). Sixth, as the result of their confidence and pressure to perform, Millennials are very achievement oriented. The desire to achieve reflects this generation's perception that they are special. These students have been told that they are special their entire lives by their parents. They have even been described as the "greatest generation" (Howe & Strauss, 1993). Finally, Millennials are the most culturally and ethnically diverse group. They are considered conventional in their ability to accept multiple, sometimes competing perspectives. This generation is known for avoiding conflict and unifying around their diversity (Monaco & Martin, 2007).

Keeling (2003) and more recently, Monaco and Martin (2007) share that in order to serve this generation of students, academic advisors must ask students tough questions that challenge their ability to establish realistic goals, solve problems, and develop critical thinking skills. Millennials expect that their academic advisor will not only know about their academic life but their personal and social lives as well. This generation prefers prescriptive advising because it resembles more of a "how to" or recipe approach to life.

If "advising is teaching" as previously described in this chapter, then it may be important to know how ATS learn. Learning styles can inform intentional advising strategies. Typically, athletic training students are often described as experiential learners. Experiential learners learn by connecting complex medical content with practical application (Schellhase, 2006). Typically, students in health care professions have concrete learning styles while students in athletic training have been found to rely on kinesthetic approaches to learning. Storytelling, scenario-

based instruction, Problem-Based Learning (PBL) and simulations are common pedagogical tools in the discipline (Franek & Martin, 2008).

Radtke (2008) reported that one of the roles of athletic training educators is to prepare students to become reflective practitioners. Reflective practitioners connect self, others, and the environment using critical thinking and decision making skills. The role of the faculty member is to help the student become more aware of self as a learner (Habley, 2005). Therefore, the role of the advisor is to ask the student thought provoking questions in order to allow the student to experience "reflection in action" (Radtke). Holistic student development occurs when students are challenged to self reflect by a significant other (i.e. their academic advisor).

Assessment of Academic Advising

The lack of agreement on a definition for academic advising, proliferation of advising models and programs, pressures on the faculty to abdicate advising to student affairs professionals, and changes in the student body have all contributed to the difficulties in measuring and assessing academic advising. There have been a number of attempts by researchers to develop and implement instruments to evaluate the quality of academic advising (Metzner, 1989; Davis & Cooper, 2001; Oehlkers & Gibson. 2001; Hesser, Pond, Lewis, & Abbot, 1996; Shelton, 2003; Sun, Valigia, & Gao, 1997). NACADA was formed in 1979 to promote and support quality academic advising in higher education (NACADA Website). They serve as a clearinghouse for academic advising instruments and resources, including the Academic Advising Inventory (AAI). The Mental Measurements Yearbook (2005) describes the purposes for the AAI as an instrument, as developed by Winston and Sandor, to measure the nature of advising relationships, the frequency of advising sessions, and students' satisfaction

with their academic advising experience. However, this instrument is expensive, time consuming, and cumbersome in its administration.

Many colleges and universities have used this instrument as well as other instruments to identify students' academic advising needs and evaluate their level of satisfaction with their academic advising experience. The results obtained overwhelmingly and consistently support the concept that academic advising contributes to the formation of a meaningful learning environment and that academic advisors are essential to the success of the student (Lau, 2003; Sun, Valigia, & Gao, 1997). Despite those findings as well as the results of many other studies, Padak (2005) reports that advising assessment is the most frequent area identified in need of further research. He argues specifically for research to assess advising that is designed to analyze the theoretical frameworks unique to each discipline or advising strategy.

Summary

As demonstrated in the literature review, academic advising is an important component of the academic process in higher education. There have been a number of attempts to both define and assess academic advising with limited success. Several issues surrounding this complex topic were explored and illustrate the need for continued efforts on the part of higher education researchers to further define, understand, and assess academic advising. Specifically the lack of knowledge about academic advising and its relationship to athletic training education coupled with the lack of formal training for academic advisors in athletic training education, illustrate the need for further study related to those issues.

CHAPTER THREE

METHODOLOGY

Athletic training has experienced unprecedented growth and change over the last fifteen years. In order to sustain that growth as well as the future health of the profession, research is needed to identify, inform, and improve current educational practice and strategies. Academic advising can be a very important part of the students' educational experience. Yet, to date, research on advising in athletic training education programs (ATEPs) is minimal.

The lack of knowledge and understanding of the complexity of academic advising in athletic training coupled with an inadequate research base contributed to the purposes for this study. The first and primary purpose of the study was to describe and analyze the perceptions of students enrolled in ATEPs about their academic advising experiences. Achieving this purpose included the development of an instrument for collecting data on student perceptions of academic advising. Development of this instrument was based on a review of literature on academic advising, Personal Investment Theory (PIT), and athletic training, which was presented in chapter two. The second purpose for the study included validation of the instrument using factor analysis. The following chapter offers the methodology employed in instrument development, data collection, and analysis. The chapter is divided into three sections: instrument development, sampling and survey procedures, and data analysis. A brief summary is offered as conclusion for the chapter.

Instrument Development

The Student Survey on Academic Advising (SSAA) (see Appendix A) was developed using multiple points of influence for evaluation and item development, which can be reduced to three phases or activities: (a) the review of literature, (b) item development and compilation, and (c) field testing and refinement. The activities involved in each of these three phases were discussed to provide justification and explanation for the decisions and actions taken in creating the SSAA.

A thorough review of the academic advising, athletic training and Personal Investment Theory literature was completed in the construction of the instrument. This review occurred in part to determine the background, viability, and significance for the study. Multiple sources were identified and selected as the result of an extensive search of research- based journals as well as a systematic review of identified reference materials. The search was focused on identifying current themes, ideas, concepts, and concerns related to defining and assessing academic advising. Reviews of each article's reference list lead the researcher to additional resources. Particular focus was placed on searching research- based materials in related health care fields such as nursing. Because of the relative infancy of athletic training as an academic discipline, much of what is known about educating athletic training students was borrowed from other health care professions. Electronic databases were also utilized and included: ERIC, ProQuest, and Medline. Key phrases used in the electronic searches included: academic advising, assessing advising, research in academic advising, defining advising, student development, and advising history.

The academic advising literature provided a wealth of resources from which were drawn descriptive attributes and characteristics of the work involved in academic advising. These were

compiled into a lengthy list of statements examined, sorted, and reduced to key ideas that described the desirable qualities of academic advisors. Concept selection and retained for use in the instrument were determined by the following criteria: (a) the concept had to be identified in a research- based publication as a desirable attribute or characteristic of effective academic advisors; (b) the concept needed to be able to be stated in a concise, clear, understandable statement; (c) the concept had to be applicable to the discipline of athletic training; and (d) the concept had to typically be identified in more than one study. Many statements were eliminated because they were too ambiguous, difficult to state in a clear, concise format, or were redundant with other items that had already been selected. Additionally, Personal Investment Theory's (PIT) conceptual framework was also used to evaluate and select concepts for inclusion in the instrument. As a result, the content included in the instrument reflected the operational definition of holistic academic advising as previously described in the literature review, which contains concepts relevant to the prescriptive model of academic advising as well as the developmental model of academic advising.

A total of 34 statements were selected for inclusion in the instrument at this point. Dillman (2000) reported that surveys with too many items receive a lower response rate than those that are shorter. Part of the reason for this rate of return is attributable to the time it takes to respond to lengthy questionnaires. The assessed time to read the 34 statements and select the appropriate response was calculated not to exceed ten minutes to complete. Development of a clear and concise instrument was essential for securing the desired response rate as well as the long term goal of a usable survey.

The 34 statements were then framed in a manner such that respondents were required to assess their degree of agreement with the statement given their academic advising experiences.

The selected responses for the statements were formatted using a five point Likert scale for measurement (Wiersma, 2000). Likert type scales are commonly used in survey research and are considered to be the standard by which survey instruments are developed. Thus, for each statement, students were asked to respond by reporting their level of agreement using the descriptors: *strongly agree*, *somewhat agree*, *neutral*, *somewhat disagree*, and *strongly disagree*. A response of *not applicable* was also provided. Those descriptors were chosen because of their frequent use in survey research as well as their ease in formatting. The descriptor of *not applicable* was included because literature identified that there would likely be times when advisees would not have had the opportunity to evaluate each statement because they may not have reached that point in their academic development where that item would have been implemented. For example, a first year student would not have had the opportunity to prepare for a national certification exam. Thus, it would result in an unfair response if the student was forced to respond in a way other than not applicable.

In the final stages of the item development and compilation phase, items were assembled with intentional organization and sequence. Critically, the items identified as developmental and prescriptive as well as those describing the PIT framework were interspersed throughout the survey to avoid the possibility of participants responding in a manner that would invalidate the results (e.g., providing a uniform response to items known as a response set). Furthermore, some items that were deemed more interesting were placed early in the survey to captivate student interest and encourage completion of the remainder of the instrument. More complex items were typically followed by an item or items that required less thought or consideration by the participant in order to respond. The instrument also contained additional questions that sought students' background/demographic information, which included there: (a) gender, (b) ethnicity,

(c) age, (d) year in school, (e) self-reported approximate overall cumulative grade point average (GPA), (f) type of academic advisor (i.e., faculty or professional), (g) type of institution (i.e., public or private), and (h) name of institution. The background/demographic questions were placed at the end of the survey (Dillman, 2000). In addition, Dr. Larry Braskamp examined the instrument and provided critical feedback prior to its implementation. As one of the nation's leading experts on Personal Investment Theory, he indicated that the items appeared sound and that he was able to identify each of the three parts of the theoretical framework.

The instrument was then transformed from a paper version into an electronic version. The decision to administer the instrument electronically was based on issues pertaining to ease of administration, probability of respondent completion, and facilitation of data analysis. The electronic version allowed for 10 items to be viewed on the screen at a time. Each item was highlighted with a contrasting color in order for the item to be viewed as a separate distinct item. At this time, the directions to respondents for completing the survey were formalized.

The third phase of instrument development, field testing and refinement, began in March of 2006. The athletic training education program directors at Washington State University, Eastern Washington University, University of Idaho, George Fox University, Linfield College, and Whitworth University (3 CAATE accredited public universities, and 3 CAATE accredited private liberal arts colleges and universities in the western United States) were given the SSAA and asked to critically review and evaluate the instrument. The purpose for this step of the instrument development was to provide content (face) validity for the instrument. Colleagues were asked not to speculate on how they might score on the instrument but rather to "think like an undergraduate athletic training student" as they critically analyzed the survey. The colleagues identified for inclusion were selected based on these attributes: (a) program directors are

knowledgeable about advising issues and student concerns given their responsibilities and duties, (b) their geographical proximity to the researcher, (c) the researcher's established professional relationship with each of them, and (d) each of them had several years of experience as an athletic training educator. Furthermore, assessment of the effectiveness of each institution's academic advising program related to athletic training education is the responsibility of the program director. An advising program and assessing its effectiveness is a requirement for athletic training program accreditation according to CAATE (2008), the accrediting agency for academic programs in Athletic Training (Standards B1.25, B2.2, and G1.8).

Valuable insight was provided, which contributed to revision of the draft of the instrument. General comments and concerns voiced at that time included:

- An overall support for the concept of developing an instrument for assessing academic advising in athletic training;
- Excitement about the perceived/potential outcomes of the identified research;
- Concern about how their own students might respond to the survey;
- Specific comments related to statement clarity and/or ambiguity (including specific language that provided additional clarity);
- Statements about how students from different types of colleges/universities might respond differently to the statements (high academic private institutions versus lower academic public institutions);
- Concerns about how the statements in the survey aligned with the current practice of athletic training and educating students;
- Comments that some of the items included in the SSAA were beyond the scope of the normal advising interactions/responsibilities at some of their institutions;

- Issues related to the lack of formal training for faculty, and specifically program directors, on advising students and assessing advising outcomes.

Changes to the instrument based on input in this phase of the process were minimal. The language of two of the items was simplified to "general education requirements" and "degree requirements." The new language resulted in more clear, concise statements. The program directors also identified that the term "challenges" as being overused (i.e., it was used at least five times as the adjective describing the advising relationship). Further, they indicated that "challenges" was too strong a term for "identifying employment opportunities" and "overcoming obstacles related to my academic development." The term was replaced with "assists" and "helps."

Field testing and refinement of the instrument identifies the third phase in the development of the instrument. Two pilot runs of the SSAA were conducted. Prior to piloting the survey, the instrument was approved for human subject use by the Washington State University Institutional Review Board. The first pilot was administered to a focus group of six undergraduate pre-professional, health care students at Whitworth University (3 female, 3 male). The students were asked to complete a paper version of the SSAA as well as to make comments or statements "to check for ambiguity, confusion or poorly prepared items" (Wiersma, 2000, p. 165). Students were also asked to provide the researcher with information about areas of confusion, difficulty, or misunderstanding concerning not only the survey instrument but the directions for completing the survey. The participants were identified to participate in the pilot run by a Biology professor at Whitworth University. Each student was allowed fifteen minutes to respond to the survey and provide comments. All of the participants in this pilot completed the task in fewer than ten minutes. They provided the researcher with two comments related to item

ambiguity. Both of the comments related to the item "my advisor encourages me to consider how my personal attributes and characteristics align with my field of study." Alternative language options were not provided by the students. The item was deemed as essential by the researcher, and consequently it remained in its original form.

Some of the students also indicated that they responded *not applicable* in some instances because they had not (yet) had that experience with their assigned advisor. They questioned the researcher if the experiences included in the survey were common in the advisee-advisor relationship and indicated a general consensus that they desired to have that type of relationship with their academic advisor. No significant changes were made to the instrument as the result of their input. A minor change was made in the introduction on the top of the form that eliminated language related to faculty promotion and tenure. It was determined that this information was not needed by the student in this format.

A second pilot run of the SSAA was administered electronically to three undergraduate athletic training students at each of the following CAATE Accredited Athletic Training Education Programs (ATEP's) outside the western region of the United States: Northern Michigan State University, University of South Florida, Ball State University, University of Tampa, Lindenwood University, and Xavier University (3 public universities, and 3 private liberal arts colleges and universities). Each program director provided the researcher with the names and electronic contact information for three students from their respective institutions. Each program director identified: one high achieving student, one average achieving student, and one below average student to participate from their respective institution. The purpose for identifying students with different academic performance was to identify if students would respond differently to the survey items based on their academic performance. The participants'

academic performance for this pilot run was not revealed to the researcher (other than through self- reported cumulative GPA – background item #40).

Eighteen students received the instrument, along with an accompanying cover letter (see Appendix B) electronically via the internet. All eighteen participated in the study by responding to the active URL embedded in the cover letter, and all completed the SSAA. A preliminary data set was obtained from the pilot run, and scores were examined for variability in responses to the items. A range of scores were evident on the Likert type scales for both between and within items, which suggested students were reading and attending to questions and providing responses that reflected the range in their experiences. Scores were also subject to a preliminary statistical factor analysis. A principal component factor analysis was computed and resulted in a clear three-factor solution (consistent with the theoretical construct of PIT). Another purpose for the second pilot was to trial run the electronic version of the documents in order to identify and eliminate problems that students might have with the technology. No problems were detected, signaling fulfillment of the study's second purpose and readiness for larger dissemination of the instrument to a larger sample of athletic training students.

Sampling and Survey Procedures

The population for this study includes all of the athletic training students that are formally enrolled (academic year 2006-2007) in the 40 CAATE accredited athletic training programs (ATEPs) located in the Western United States. The ATEP Program Directors from the following states, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, and Washington (no accredited programs in Alaska, Hawaii, or Wyoming) were invited to participate in this research. Appendix C indicates the institutions invited to participate, each institution type (public or private), and each institution's willingness to participate.

Program directors were approached and asked to provide the names and email addresses for all of the athletic training students formally enrolled in their respective programs during the fall semester of 2006. Upon receipt of the student information, a master list or sampling frame was created and organized alphabetically and by institution. The estimated number of subjects for the population was 780 (n=780) given the number of names included in the sampling frame. According to Krejcie and Morgan (1970), the suggested sample size for this population should be approximately 258. Therefore, from the sampling frame of 780 students, 258 subjects were randomly selected. A sample of that size provided a statistically significant representation of the identified population needed for generating generalizable findings. Following Dillman's (2000) Tailored Design Method of survey research, a minimum response rate of approximately 70% was desired.

The survey was administered electronically through the Center for Teaching and Learning Technology at Washington State University. Each of the randomly selected students received an electronic letter of invitation to participate in the study that was co-signed by their program director and the primary researcher (see Appendix B). The co-investigation (the use of the ATS Program Director's name and signature on the invitation to participate) occurred in an effort to achieve a high response rate (Couper, 2001; Bowker, 1999). The program director's name and signature implied an endorsement of the research that may have provided validity to the study's importance from the student's perspective. Included in the letter of invitation to participate was (a) the purpose of the study, (b) how the student was selected, (c) assurance of confidentiality, (d) authorization of the research by the WSU Institutional Review Board, and (e) the electronic URL to connect them to the actual survey (Schaefer & Dillman, 1998).

Also included on the electronic invitation to participate was a seven digit identifier number (Wiersma, 2000). Students were required to access their survey with the use of this identifier. The purpose of this number was to allow for follow-up of non-respondents. Follow- up of non-respondents included an email reminder five days prior to the submission due date. Another email reminder was sent to all non-respondents the day prior to the submission due date (Dillman, 2000). One final email was sent to all non-respondents the day following the scheduled submission date encouraging completion of the survey. Dillman reports that multiple attempts to remind and firmly encourage non-respondents to reply can increase response rates to nearly 70%.

The instrument was available at the assigned URL for fourteen days with the first available date on October 21st, 2006. On November 4th, 2006 the instrument was to have been removed from active access by the subjects. The instrument remained active until November 16th, 2006, in order to attain a higher response rate by making additional attempts to contact non-respondents.

Data Analysis

Once data were collected, the analysis occurred in two steps. First, a descriptive item analysis was performed, followed by the factor analysis. The descriptive analysis of the data involved examination of the distribution of scores—including central tendency, variability, and shape—per item on the SSAA. This analysis allowed the researcher to understand and interpret the nature of the data concerning how students reported to perceive their academic advising experiences. Specifically, means and standard deviations were calculated per item to identify athletic training students' level of agreement with each statement (Shavelson, 1996). Analysis of the standard deviation indicated the degree of spread in the responses. The degree of spread is

used to identify the variability. Responses indicated as *not applicable* were coded as missing so as to not have an effect on the results of the survey.

The demographic information was analyzed to allow the researcher to identify the makeup of the sample and compare it against what is known about the characteristics of athletic training students.

An exploratory factor analysis was also conducted to examine the conceptual factor structure of the instrument (Torkzadeh & Doll, 1999; Tabachnick & Fidell, 1989). Factor analysis is a statistical process that attempts to explain a certain phenomenon in relationship to predictive factors also known as patterns of correlation (Torkzadeh & Doll, 1999). For the purpose of this dissertation, factor analysis was used to test the theoretical make- up of the SSAA by identifying patterns of correlation between the three (3) theoretical constructs hypothesized in Personal Investment Theory (one's sense of self; social culture and environment; and behaviors). Factor analysis allowed comparisons between the pattern of loading from the theory and the pattern of loading from the data. The exploratory factor analysis was performed to identify the number of factors. Factors with eigenvalues greater than 1.0 were retained in order to account for the greatest amount of total variance (Goodwin & Goodwin, 1999). Additional criteria to determine if the factor loaded included: (a) a minimum of three items loading on one factor at a level of .50 or greater (Shelton, 2003); (b) following the rotation of variables, only items with a factor score of .30 or greater were included in the factor (Goodwin & Goodwin, 1999); and (c) the empirical or logical fit of the item to the construct. Finally, from this resulting model, items were summed per factor to generate three factor scores (i.e., sense of self, social culture and environment, and behaviors) for each respondent. Means and standard deviations for these factors were calculated for the sample.

Summary

An appropriately designed, constructed, and validated instrument to measure student perceptions of academic advising has been identified as an important topic for athletic training research. In order to identify and evaluate what is happening in the advising relationship, sound strategies, like those described in chapter three, can assist one to further understand the importance and clarify the complexities associated with academic advising.

CHAPTER FOUR

ANALYSIS

Chapter four of the dissertation reports the findings from the analysis of student responses to the Student Survey on Academic Advising (SSAA). Thirty-seven program directors of the 40 CAATE accredited athletic training education programs (ATEPs) that were invited to participate in the study provided a cumulative sampling frame of 780 student names and accompanying email addresses. Of these 780 athletic training students, 258 were selected and sent the SSAA. Two hundred and nine responded representing an 81% response rate. Included in this chapter is description of the data obtained about the perceptions of athletic training students on the nature of their academic advising experiences. There is no normative data available by which to compare the responses made by these students. Thus, chapter four provides the baseline for further research and the initial evidence as to the validity of data collected by the SSAA. Chapter four is divided into five sections: student demographic information, items descriptive analysis, exploratory factor analysis, reliability of factor scores, and factors descriptive analysis. A brief summary of the key findings is offered as conclusion.

Student Demographic Information

Placed at the end of the survey were questions about the student. Students were asked to indicate their (a) gender, (b) ethnicity, (c) age, (d) year in school, (e) self-reported approximate overall cumulative grade point average (GPA), (f) type of academic advisor (i.e., faculty or professional), (g) type of institution (i.e., public or private), and (h) name of institution.

Thirty-seven percent of the respondents indicated that they were male, and 63% identified themselves as female. A majority (74%) classified themselves as Caucasian, 8% were Asian/Pacific Islander, 7% were Hispanic, 3% were American Indian/Alaskan Native, 3% were Black/Non Hispanic, and the remaining 5% selected the category of other. Seventy-two percent of the participants checked the box indicating that they were from 18 to 22 years old. Twenty-eight percent of the participants were 23 years of age or older. The demographic information provided by respondents reflects the general perception about the characteristics of the athletic training student population. Most students are female, Caucasian, and the age of traditional undergraduates.

Seniors made up 48% of the respondents, 37% were juniors and 15% were sophomores. A majority (48%) had a self reported GPA between 3.00 and 3.49. Additionally, 36% reported a GPA above 3.5, 15% reported 2.5 to 2.99, and less than 1% were below 2.0 GPA. Of the 205 respondents, 171 (63%) reported advising by a faculty member, and 34 (37%) reported advising by a professional advisor. Finally, of the total number of participants, 69% attended public institutions while 31% attended private institutions. Again, these findings were unsurprising and reflect responses given the sampling technique. In other words, there is nothing in these data to suggest response bias given the characteristics of the respondents.

Descriptive Analysis of Items

The empirical analysis of the responses began by examining the distribution of scores per item. Student response rates and percentage of responses broken down by response categories per item were calculated and can be found in Appendix D. In looking at the data, it should be noted that there were no missing data. Items on which students indicated a score as *not applicable* were coded as non-responses. Therefore, the response rate on Appendix D indicates

the degree to which students assessed an item as not applicable for whatever reason. Means and standard deviations were also calculated for each item and can be found in Appendix E. The results of the calculations were scrutinized for patterns within and across items to provide insight as to what athletic training students reported about their academic advising.

Overall, athletic training students tended to report that items were applicable as on all but one item received scores from 200 of the 209 respondents. More importantly, respondent scores indicated a favorable perception of their academic advising experiences. Examination of the mean scores per item support this interpretation. Specifically, 4 items received mean scores of 1.5 or less indicating strong agreement, 29 items received mean scores between 1.6 to 2.5 indicating agreement, and 1 item was found to possess a mean score indicating a neutral response (i.e., 2.6). Standard deviations for these distributions of scores ranged from .6 to 1.2. Although items scores were not normally distributed, the variability that was evidenced was neither extreme nor minimal. The discussion below focuses on the descriptive data to assess those items where students reported strengths and weaknesses in their academic advising.

Item Analysis – Strengths. Items in which students reported their highest level of agreement included numbers 24, 12, 31, 11, 18, and 14. Analysis of those items shed insight into what students perceive that they are receiving in their advising relationship. Students reported the highest level of agreement with "My advisor is available to me either during scheduled office hours or by individual appointment" (item 24) (M = 1.3, SD = .6). Approximately 95% of the respondents either strongly agreed or somewhat agreed with this statement.

The item with the second highest level of agreement reported by students was "My advisor responds to my emails and/or phone calls related to academic advising in a reasonable period of time" (item 12) (M = 1.3, SD= .7). Seventy-four percent of athletic training students

strongly agreed, and 20.7% somewhat agreed that their advisor is available during scheduled office hours or by appointment. Both categories accounted for nearly 95% of the total responses to this statement.

Students reported the third highest level of agreement with "My advisor directs me in preparation for national certification exams" (item 31) (M =1.5, SD =.8). Nearly 60% of students strongly agreed or somewhat agreed (28%) that their advisor directs them in preparation for national certification exams. For athletic training students, the BOC exam is the culmination of their academic education. Successful completion of this national exam allows one to practice athletic training. Preparation for national certification exams was identified in the health care professions literature as a unique and vitally important characteristic of academic advisors as reported by students (Shelton, 2003).

Item 11, "My advisor demonstrates respect for my opinions" (M = 1.5, SD =.8) was the fourth highest rated item by students. Of the total number of participants, 121 or 58% strongly agreed that their advisor respects their opinion, 30% somewhat agreed, 8% were neutral, and 4% somewhat or strongly disagreed with that item.

Item 18, "My advisor serves as a positive professional role model for the profession of athletic training" (M =1.6, SD =.93) was the fifth highest rated item by students. Although 62% of students strongly agreed with this item, a smaller percentage than that observed for the previously examined items was reported for somewhat agreed (i.e., 24%). Eight percent agreed, 4% somewhat disagreed, and 2% strongly disagreed that their advisor serves as a positive professional role model for the profession of athletic training. Weidner (2006) reported that the importance of professional role modeling and professional socialization was more important in the development of athletic training students than anything instructed in the classroom.

The item with which students reported their sixth highest level of agreement was "My advisor assists me in identifying and selecting courses" (item 14) ($M = 1.6$, $SD = .8$). Item 14 is clearly an example of prescriptive academic advising. Prescriptive advising is preferred by today's Millennial students because of its clear, sequential nature (Monaco & Martin, 2007). Fifty-eight percent of athletic training students strongly agreed or somewhat agreed (28%) that their advisor is effective in meeting that need.

The examination of the items that participants rated highest are typical of those offered in a prescriptive advising model. Generally, athletic training students perceived that the prescriptive advising tasks like exam prep, course selection, and advisor availability are being met by their advisors effectively. Students also rated these questions rather than electing to respond to them as *not applicable*. This provides some evidence of the importance of prescriptive advising in a holistic advising program. Students need to feel supported in the "tasks" of obtaining a degree. Many of the characteristics in prescriptive advising have been made easier by the use of electronic program evaluations, cohort program structures, and other forms of technology. As stated previously, today's student is very comfortable with technology and excels when ambiguity is minimized (Monaco & Martin, 2007).

Item Analysis – Concerns. Items in which students reported the lowest level of agreement included numbers 26, 16, 5, 6, and 33. Analysis of those items identified what students perceived that their advisors may not be as effective (although still relatively strong scores are noted for all but item 26).

Students reported the lowest level of agreement with "My advisor helps me to manage my emotions" (item 26) ($M = 2.6$, $SD = 1.1$). Only 20% of athletic training students strongly agreed with this item, 23% somewhat agreed, 36% were neutral, 14% somewhat disagreed, and

7% strongly disagreed. This is a particularly interesting finding. By its very nature, athletic training is an emotionally charged, high stress vocation. Managing one's emotions is very important in this type of environment. This is the item that was rated by students the most number of times as *not applicable*.

The item rated second lowest by students was "My advisor assists me in developing study skills" (item 16) ($M = 2.5$, $SD = 1.1$). Of the 201 respondents to this item, 20% strongly agreed, 35% somewhat agreed, 26% rated their experience as neutral, 14% somewhat disagreed, and 6% strongly disagreed with the statement. This provides a sharp contrast to item 31 on preparation for national boards, which was one of the highest rated items and is quite similar in content to this item. This suggests that advisor and advisee conversations focus on content knowledge or test taking skills rather than study habits.

The third lowest rated item by students was "My advisor assists me in identifying/clarifying my personal values" (item 5) ($M = 2.4$, $SD = 1.1$). Twenty percent of students strongly agreed, 35% somewhat agreed, 27% neutral, 12% somewhat disagreed, and 6% strongly disagreed with this statement.

Item 6 "My advisor provides ideas and suggestions to help me to manage my time" ($M = 2.3$, $SD = 1.1$) was the fourth lowest rated item. Approximately 61% of students strongly agreed or somewhat agreed that their advisor assists them in managing their time. Time management is consistently referenced in the advising literature as one of the most important components of an advising program. Time management is one of the skills that require students to accept responsibility for this component in order to be effective in their academic pursuit. It appears that some advisors may not be attending to these issues as closely as others.

The fifth lowest item that students responded to was "My advisor demonstrates interest in my activities outside of my classes" (item 33) ($M = 2.3$, $SD = 1.2$). Of the total number of participants, 36% strongly agreed, 27% somewhat agreed, 21% neutral, 9% somewhat disagreed, and 7% strongly disagreed with this item.

Analyses of those responses suggest that items with which students had the lowest level of agreement were connected with the developmental academic advising model. This result is not surprising based on the fact that academic advisors in athletic training report having minimal if any formal training on advising (as described previously in the background for the study and literature review). In addition, developmental advising strategies are more complex because of the somewhat ambiguous nature of the topics described as developmental (e.g., managing emotions, identifying personal values, and demonstrating interest in activities outside of the classroom). In the development of the survey instrument, athletic training program directors expressed the most concern with the developmental items. Their concerns were not related to the quality or content of the item but on how they perceived that students might evaluate their advisors on those items, because faculty in their programs had not thought holistically about the advising service they were providing. These concerns were also echoed by the students in the focus group that completed the first pilot of the survey. One of the students even asked if this was what his advisor should be doing with him in their advising meetings. He went on to state that it would be great if that was what was really happening with his academic advisor.

Four of the five items that students rated the lowest were items that can be seen as aligned with developing one's sense of self—one of the components of Personal Investment Theory. Two of the characteristics that students rated lowest, developing study skills and providing ideas to manage time, are consistently identified as essential components in an

academic advising program. However, these two items are frequently reported by faculty and advisers as skills that students have difficulty with in their development.

Exploratory Factor Analysis

An exploratory factor analysis was conducted using principal components extraction with varimax rotation. All 34 items on the SSAA were included in the model. To determine sample adequacy of the factor analysis, KMO and Barlett's test of sphericity were conducted, KMO = .94, χ^2 (45) = 4243.9, $p < .001$. The factor analysis produced three factors with eigenvalues over 1. As discussed in chapter three, factors with eigenvalues greater than 1.0 were retained in order to account for the greatest amount of total variance (Goodwin & Goodwin, 1999). Additional criteria to determine if the factor loaded included: (a) a minimum of three items loading on one factor at a level of .50 or greater (Shelton, 2003); (b) following the rotation of variables, only items with a factor score of .30 or greater were included in the factor (Goodwin & Goodwin, 1999); and (c) the empirical or logical fit of the item to the construct. The final factor structure accounted for 63% of the total variance.

Factor 1 (labeled *Self*) accounted for 23% of the total variance and included 12 items with factor loadings ranging from .815 to .522 as offered on Table 2 below. All of the items that loaded on *Self* were conceptually consistent with developing one's self. As described previously in the literature review, this part of the theory describes one's self identity and image as demonstrated through personal goals, sense of purpose, and perceived opportunities. For example, items like the following can be viewed as sharing a central focus on helping students to develop their sense of self or self identity: "My advisor challenges me to explore my values as they relate to career choice" (item 7), "My advisor assists me in identifying and clarifying my personal values" (item 5), "My advisor encourages me to consider how my personal attributes

and characteristics align with my field of study" (item 3), and "My advisor assists me in identifying my abilities and strengths" (item 27). A majority of the items that loaded on Factor 1 can be seen as related to the developmental model of academic advising.

Table 2

Factor Loadings – Self

Variable Label	*Self*	*Behaviors*	*Environment*
Item 7	.815	.193	.208
Item 5	.802	.286	.144
Item 3	.744	.217	.214
Item 1	.719	.213	.211
Item 2	.676	.175	.295
Item 27	.666	.506	.132
Item 9	.644	.272	.369
Item 8	.583	.229	.473
Item 26	.562	.561	.105
Item 6	.551	.532	.317
Item 25	.529	.377	.442
Item 16	.522	.481	.404
Eigenvalues	7.840		
Proportion of Variance	23.06		

For three of the items on Table 2, "My advisor provides ideas and suggestions to help me to manage my time" (item 6), "My advisor assists me in developing study skills" (item 16), and "My advisor helps me to manage my emotions" (item 26), the factor loadings were very close between *Self* (Factor 1) and *Behaviors* (Factor 2). These three items do fit with the other items that loaded on *Self* as emotions, study habits, and managing one's time are key aspects of student identity. Yet, they can also be seen containing something different from these items.

Factor 2 (labeled *Behaviors*) accounted for 21% of the total variance and contained 12 items with factor loadings ranging from .785 to .478 as shown on Table 3 below. All of the items that loaded on Factor 2 were conceptually consistent with the second component of PIT classified under behaviors. The developing factor structure evident in the study provides further evidence of PIT in its explication of advising. *Behaviors* is a factor that contains items that describe actions and engagement on the part of advisors that relate to their investments of time, talents, and energy in relationships with advisees. Items included in *Behaviors* are: "My advisor is nurturing" (item 28), "My advisor provides positive reinforcement" (item 21), and "My advisor is a good listener" (item 22).

Again, items can be observed loading onto other factors. For example, item 29 and item 10 "My advisor challenges me to articulate my thoughts and feelings" and "My advisor provides social support that contributes to my college experience" respectfully, load onto *Self*. Challenging a student to articulate thoughts and feelings can be seen as similar to the other items on this previously discussed factor. Sharing variance with Factor 3 (labeled *Environment*) were "My advisor serves as a positive professional role model for the profession of athletic training" (item 18) and "My advisor shares information clearly and accurately" (item 15). Both items evidence a response that fits with both factors.

Table 3

Factor Loadings – Behaviors

Variable Label	*Self*	*Behaviors*	*Environment*
Item 28	.220	.785	.191
Item 21	.272	.777	.266
Item 22	.244	.718	.344
Item 11	.261	.667	.284
Item 30	.273	.616	.443
Item 15	.091	.609	.557
Item 29	.509	.608	.163
Item 10	.519	.604	.164
Item 13	.363	.575	.391
Item 18	.317	.555	.458
Item 33	.454	.508	.186
Item 17	.399	.478	.343
Eigenvalues		7.220	
Proportion of Variance		21.23	

The third factor in model accounted for 19% of the total variance and included 10 items with factor loadings from .772 to .468 as shown on Table 4 below. All of the items that load into *Environment* were conceptually consistent with that component of PIT. Advising concerns

connected to curriculum, co-curricular activities, colleagues, and community are present in the items. "My advisor directs me in preparation for national certification exams" (item 31), "My advisor offers guidance on degree requirements for my program of study" (item 20), and "My advisor refers me to additional academic resources if needed" (item 19) offer examples of items indicative of the social culture and environmental considerations in advising. Many of the items that loaded onto *Environment* were closely connected to a prescriptive advising model: exam preparation, degree requirements, general education requirements, registration processes, and university policies and procedures.

Similar to the previous two tables, Table 4 also shows overlap between the factors on a number of items. "My advisor assists me in establishing realistic academic goals" (item 4) and "My advisor discusses with me college/university policies and procedures (i.e. adding and dropping courses)" (item 34) loaded on both *Self* and *Environment*. Further, "My advisor is available to me either during scheduled office hours or by individual appointment" (item 24) loaded onto *Behaviors* and *Environment*. The items that overlap between two factors may reflect the interconnectedness of the theory described in the Venn diagram presented in chapter two.

Table 4

Factor Loadings – Environment

Variable Label	*Self*	*Behaviors*	*Environment*
Item 14	.126	.236	.772
Item 31	.312	.081	.725
Item 20	.347	.350	.688
Item 19	.423	.308	.661
Item 32	.361	.174	.641
Item 23	.380	.303	.606
Item 34	.516	.257	.570
Item 12	.063	.290	.568
Item 24	.006	.488	.538
Item 4	.472	.210	.486
Eigenvalues			6.47
Proportion of Variance			19.02

Figure 2 provides an illustration of how the items included in the survey instrument align with the three factors of Personal Investment Theory. *Self* resulted in six items clearly loading on this factor. As previously described in chapters one and two, developing "one's sense of self" considers personal values, goal setting, analysis of personal abilities and strengths (Maher &

Braskamp, 1986). The items identified in the factor labeled *Self* are consistent with those characteristics. They include descriptors like: identifying, exploring, and clarifying values; examining personal attributes; establishing goals; and exploring options.

The factor labeled *Behaviors* produced seven items that clearly load on this factor. Chapters one and two describe patterns of behavior as evidence of student engagement. Student engagement is a predictor of student persistence (Lau, 2003). Patterns of behaviors examine how students spend their time. What motivates a student to act (or not act) allows us to potentially predict their behaviors (Maehr & Braskamp, 1986). The items identified in the factor labeled *Behaviors* include the advising attributes of: nurture, positive reinforcement, active listening, respectful actions, expressing personal interest in students' activities, and providing information. Those examples of *Behaviors* provide evidence for the way in which an advisor can contribute to student success.

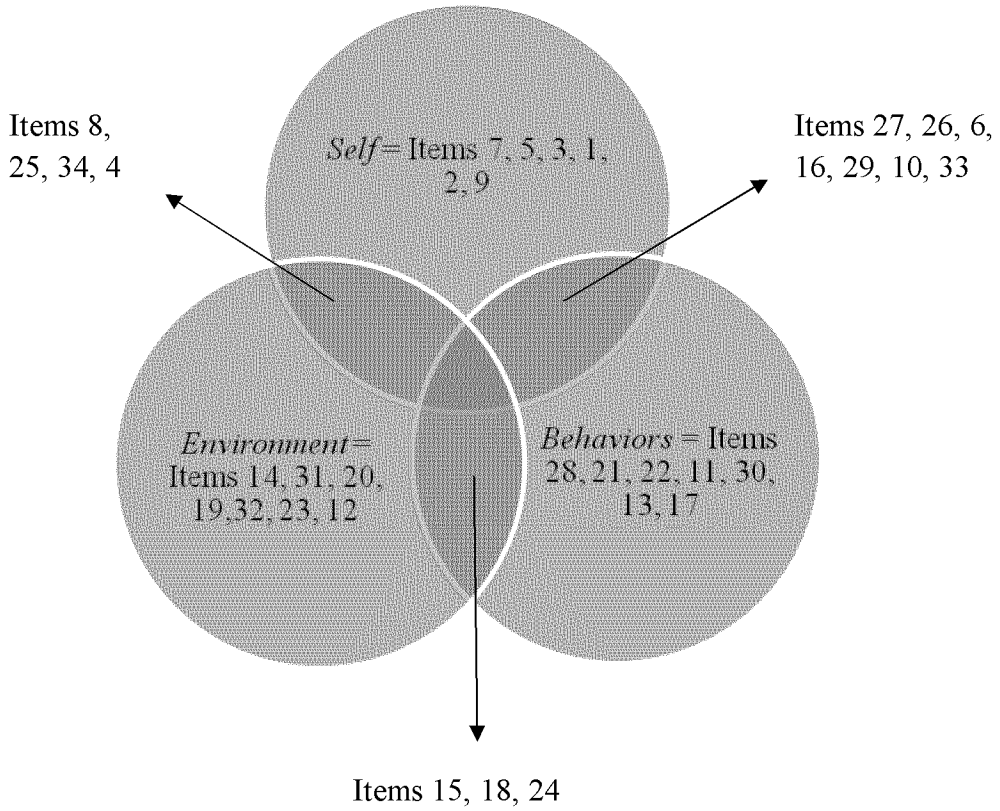
The factor *Environment* resulted in seven items clearly aligning with that factor label. *Environment* is a very broad, inclusive term. From the researchers perspective, as well as supported by Maehr and Braskamp (1986), *Environment* refers to how curriculum, co-curriculum, colleagues, and community interact and relate with each other. A common phrase used in education circles states that "learning does not occur in a vacuum." In the same way, advising is influenced, guided, and directed by what is happening around the student. Stated differently, *Environment* can be used to describe the climate of the advising experience. Environment is influenced by students sense of self and evidenced by the behaviors exhibited and previously described (Maehr & Braskamp, 1986). Items identified as *Environmental* include the following: being responsive to student requests, providing guidance and direction, serving as a referral source for additional assistance, etc. If the *Environment* is not conducive to a

supportive advising experience, gaps in student development and learning may occur. The advising environment is influenced by both the advisor and the advisee. As previously described in the literature review, the effective advising experience is relational in nature. The manner of conversation is that of a dialogue rather than a monologue. Establishing an advising environment based on appropriate levels of challenge and support can result in students' developing a deeper, richer understanding of who they are and what they chose to do (Sanford, 1967).

Also identified in Figure two are three areas in which items overlap between two of the three factors. Those items met all of the criteria for loading on more than one factor. Four items co-loaded between *Self* and *Environment.* Three items co-loaded between *Environment* and *Behaviors.* Seven items co-loaded between *Self* and *Behaviors.* Those areas of multicolinearity were anticipated because of the inter-connected relationship between the factors described in the theory. The high degree of overlap however, was not anticipated. As the result of the broadly defined characteristics of each of the factors of the theory, a case could empirically be made to have the item load on either of the factors identified. The areas of multi-co linearity may also serve to identify subsets of each factor. For example, the items loading in both *Self* and *Behaviors* included: managing emotions, identifying personal strengths, challenging students to articulate their thoughts and feelings, providing social support, and demonstrates an interest in my activities outside of class. Those items clearly provide evidence of behaviors that contribute to developing self identity. In other words, the co-loading resulted in a logical explanations of the highly complex, interrelated factors described in Personal Investment Theory.

Figure 2

Venn Diagram of Item Distribution by Factors



Tables 2-4 identify how all of the items included in the Student Survey on Academic Advising (SSAA) load onto one of the three defined factors. Each of the factors contributes roughly a third of the variance of the total variance explained by solution. In traditional factor modeling, the overlap between items as shown on Tables 2-4 is unwanted. The desire is for items to load uniquely or discretely onto one factor only. Items which load onto two or more are considered poor as they are viewed as diluting the conceptual basis of the factor. The theoretical

stance advanced within PIT, however, suggests such shared variance is to be expected. The overlap in the three factor model is indicative of the interconnected nature of PIT's three component model. Based on the factor analysis, the SSAA can be divided into three factors (*Self*, *Behaviors*, and *Environment*), which reflect the three components advanced within PIT.

Reliability of Factor Scores

An alpha reliability coefficient is a measure that identifies how consistent scores for items are within each factor. Factors with a reliability of .80 are considered good while factors with a reliability of .90 are considered excellent. The alpha reliability coefficients for the three factor structure solution generated by the exploratory factor analysis were calculated. The findings are offered on Table 5: for the 12 items included in *Self* $\alpha = .95$, for the 12 items that assess *Behaviors* $\alpha = .95$, and $\alpha = .92$ for the 10 items which measure *Environment*. These observations provide statistical evidence to support the conceptual nature of PIT as it is measured by scores collected by the SSAA.

Correlations were also computed in order to identify how strongly each factor related to the other factors and are included on Table 5 below. Specifically, the items included for each factor were summed and divided by the number of items to generate a score for *Self*, *Behaviors*, and *Environment* for each respondent. Pearson's Product Moment Correlation Coefficients were calculated as well as means and standard deviations for each of the factors. The results reveal a degree of overlap, not dissimilar to that noted in the factor loadings discussed previously. The difference between the two analyses, however, is that with correlation coefficients the degree of shared variances between the factors can be precisely stated. Seventy percent of the variability in *Self* is shared with *Behaviors*, 68% of the variability in the factor *Behaviors* is in common with

Environment, and 60% of the variability in *Self* is shared with *Environment*. The results of the analysis were anticipated in a way because of the complex, highly interrelated nature of the theoretical construct posited in PIT. What was not anticipated was the degree of the overlap.

Finally, the means and standard deviations for each of the factors for the sample were examined. First, the factor of *Self* received the strongest rating by the athletic training students. A mean of 2.1 indicated that they somewhat agreed that their advising included these kinds of experiences. They also somewhat agreed to items as captured on *Behaviors* and *Environment* but to a lesser extent. These findings indicate that the developmental model of advising appears to be more evident in the advising practices offered in ATEPs than the prescriptive model. However, further research is needed to determine significance and magnitude of the difference as assessed by these factors. Given the overlap present in the model, such differences may be hidden or exacerbated in these data.

Table 5

Intercorrelations, Internal Reliability Estimates, Means, and Standard Deviations for Study Factors ($N = 209$)

Factor	*Alpha*[1]	*M* /*SD*[2]	*Self*	*Behaviors*
Self	.95	2.1/.8		
Behaviors	.95	1.8/.8	.84*	
Environment	.92	1.7/.6	.78*	.83*

Notes. [1]Internal reliability estimates are based on Cronbach's alpha. [2]Variables were measured on five-point scales wherein lower values indicate a greater agreement with the variable *$p < .05$ (two-tailed).

Descriptive Analysis of Factors

The final section of the data analysis examines the means and standard deviations for the three factors *Self*, *Behaviors*, and *Environment* by student demographic and institutional information. This exploration occurred to provide a clearer picture of the SSAA as a tool, exposing possible patterns across student groups as well as guiding questions to areas for further study. This analysis is for descriptive purposes only, making no inferences to the population at large. Further research is called for in the discussion below as appropriate given the presented findings.

Table 6 reports the means and standard deviations for the three factors by gender. Differences between males and females are minimal. This suggests that both males and females perceived their advising experiences similarly. It may have been interesting to know if the advisors were male or female and if their gender might have produced different perceptions of the advising experience. Academic advising literature reports same gender advising (male advisor to male student; female advisor to female student) is generally rated higher than opposite gender advising (Lau, 2003; Davis & Cooper, 2001). Gender of the advisor was not accounted for in this study, consequently further study is warranted.

Table 6

Number, Means, and Standard Deviations for Factors by Gender

Group	n	*Self*	*Environment*	*Behaviors*
		M/SD	*M/SD*	*M/SD*
Male	77	2.1/.7	1.8/.6	1.6/.5
Female	129	2.2/.9	1.8/.8	1.7/.7

Similar to the findings for factors by gender, the difference by ethnicity shown on Table 7 is minimal. Students of color report a slightly higher level of agreement in their perceptions of academic advising than Caucasian students. Because students of color represent less than 33% of the sample, differences may be hidden by their small numbers and aggregation into one group. All students of color were combined into one group because the individual group numbers were so low that meaningful analysis could not have been achieved. Although the data presented indicates that students of color were generally supportive of their advising experience, further study is recommended to determine the significance and magnitude of the difference, if any. Research indicates that the academic advising needs for African-American students differs from that of Caucasian students (Hesser, et.al, 1996). The analysis in this study was not detailed enough to identify differences between African-American and other ethnic groups.

Table 7

Number, Means, and Standard Deviations for Factors by Ethnicity

Group	n	*Self*	*Environment*	*Behaviors*
		M/SD	*M/SD*	*M/SD*
Caucasian	153	2.2/.8	1.9/.8	1.7/.7
Students of Color	52	2.1/.8	1.7/.6	1.5/.6

The difference reported by age between 18 – 22 year old students and those 23 and older is very low as found on Table 8. This may have been the result of a very low number of respondents in the 23 year old and older group. This group accounted for 23% of the sample. A limitation of the instrument was that it asked students to report their age between 18 – 22 years old. Anything over 22 was treated as one group. It is unknown how many of the respondents in

that category were 23. They would still be considered as Millennial students as generational boundaries are not exact, but rather broad generalizations. Historically athletic training has been an undergraduate degree that generally attracts traditional aged students. Demographic shifts have led to the recent development of Entry-Level Masters degree programs in athletic training. That may further diminish the number of non-traditional undergraduate students. As previously stated, more research is recommended, perhaps examining the advising differences between undergraduate athletic training students and entry level master's athletic training students.

Table 8

Number, Means, and Standard Deviations for Factors by Age

Group	n	*Self* *M/SD*	*Environment* *M/SD*	*Behaviors* *M/SD*
18-22 years old	169	2.2/.8	1.8/.7	1.7/.7
23 years old or older	38	2.1/.8	1.9/.8	1.7/.6

Table 9 reports some interesting differences. Sophomores reported lower scores on *Environment* while Juniors indicated higher scores on *Behaviors.* The Sophomore year marks the beginning of the students clinical experience component of their degree. Clinical experiences for beginning students are highly structured because students have demonstrated minimal proficiency. As the student progresses in the program, they are allowed more autonomy, and the complexity of their environment becomes quite convoluted. This may account for the change in student's perceptions related to *Environment* for Sophomores (M = 1.5, SD = .4) to Juniors (M = 1.8, SD = .7) to Seniors (M = 1/9, SD = .8).

The Junior year in most athletic training programs is generally the most rigorous academically. Not only has the academic difficulty increased but so has the intensity of the clinical experience. Junior athletic training students start to consider graduate school preparations, identifying job opportunities, and establishing the foundation for success on the Board of Certification (BOC) exam. These complexities are difficult for students to navigate. Juniors may be more critical of their advising experience as the result of their own personal and professional development. It has been the experience of the researcher (over 25 years of educating athletic training students) that seniors move to a position of more autonomy and are often treated like colleagues rather than students. This might also account for the higher scores (i.e., less agreement) reported by Juniors on *Behaviors* in particular as compared to Sophomores and Seniors.

Table 9

Number, Means, and Standard Deviations for Factors by Year in School

Group	n	*Self* *M/SD*	*Environment* *M/SD*	*Behaviors* *M/SD*
Freshmen	0	NA	NA	NA
Sophomores	32	1.9/.6	1.5/.4	1.3/.3
Juniors	77	2.2/.9	1.8/.7	1.6/.6
Seniors	98	2.2/.8	1.9/.8	1.1/.7

Table 10 reports the means and standard deviations for each of the three factors by students self reported cumulative GPA. Identified in the data are very subtle or no differences

between the 2.5 GPA students and the 4.0 GPA students. Empirically, one would anticipate that students with lower GPAs might be more critical of their advising but that they should also receive higher levels of support through their advising. Such contradictory influences would have the effect of neutralizing each other. These results might also imply that academic advisors may not be as attentive to athletic training students' low GPAs as they ought to be. Further, the 2.5 – 2.99 GPA category accounts for less than 20% of the population. Thus, the sample may be too small for accurate analysis. Further study and testing is warranted to determine the significance and magnitude of the results related to GPA.

Table 10

Number, Means, and Standard Deviations for Factors by Self Reported Cumulative GPA

Group	n	*Self* *M/SD*	*Environment* *M/SD*	*Behaviors* *M/SD*
3.5 or greater	75	2.1/.8	1.8/.7	1.6/.7
3.0 – 3.49	98	2.2/.8	1.9/.8	1.7/.6
2.5 – 2.99	34	2.0/.8	1.6/.6	1.6/.7

The results of the data analysis in Table 11 appear to indicate that advising received from a professional advisor may not be much different than that received by a faculty advisor, at least as reported on the SSAA. This may be an accurate analysis, but the results may also be suspect. Faculty advising is the dominant type of advisor in athletic training education programs, even in larger research- based universities. The SSAA provided the following student instructions: "Please evaluate your currently assigned, athletic training education program academic advisor

(not frosh advisor, student advisor, or general education advisor) based on your current experiences with this advisor." No definitions were provided to describe the difference between faculty and professional advisors. More research is needed before drawing conclusions.

Table 11

Number, Means, and Standard Deviations for Factors by Type of Student Advisor

Group	n	*Self*	*Environment*	*Behaviors*
		M/SD	*M/SD*	*M/SD*
Faculty	170	2.1/.8	1.8/.7	1.6/.7
Professional	34	2.3/.8	1.9/.8	1.7/.6

Table 12 reports the number, means, and standard deviations for factors by institution type. The reported differences are minimal, indicating that students perceive that they are receiving a similar advising experience regardless of institution type.

Table 12

Number, Means, and Standard Deviations for Factors by Institution Type

Group	n	*Self*	*Environment*	*Behaviors*
		M/SD	*M/SD*	*M/SD*
Public	143	2.2/.9	1.9/.8	1.7/.6
Private	64	2.0/.7	1.7/.7	1.6/.7

Conclusion

Chapter four reported and provided an analysis of student responses to the SSAA. Demographic and institutional information about the respondents reflected the general perception about the characteristics of the athletic training student population. Most of the students are female, Caucasian, and the age of traditional undergraduates. Respondent scores indicated a favorable perception of the students' advising experience. Items with which students reported their highest level of agreement were generally prescriptive advising tasks, while items with which students reported their lowest level of agreement were developmental advising skills.

An exploratory factor analysis produced a three factor structure accounting for 63 percent of the total variance. Each of the three factors accounted for approximately a third of the total variance. Although the item overlap is typically unwanted, PIT suggests that the shared variance was to be expected. Based on the factor analysis, the SSAS is dividable into the factors of *Self, Behaviors,* and *Environment,* which reflect the three components of the theory.

Alpha reliabilities for the factors provide statistical evidence to support the conceptual nature of PIT as measured by the SSAA data. Correlation results reveal a degree of overlap between the structures similar to the factor loadings previously identified.

Findings from analysis of the means and standard deviations of each factor indicate the factor *Self* as receiving the strongest rating. Athletic training students also somewhat agreed to the items identified in *Behaviors* and *Environment* but to a lesser extent. Descriptive analyses of the factors indicate in most instances subtle differences. A discussion of those differences point to areas for future research and attention in improvement of advising practices.

CHAPTER FIVE

CONCLUSION

The discipline of Athletic Training has experienced major growth and reform during the 1990s (Ray, 2006). The fewer than 100 athletic training education programs (ATEPs) worldwide (Ebel, 1999) has multiplied to nearly 400 in the United States alone. Research on teaching and learning in ATEPs for both clinical and classroom settings has occurred to assess practices and facilitate improvement for student learning outcomes (Gould & Caswell, 2006; Harrelson, Leaver-Dunn, & Martin, 2003; Henning et al., 2006; Lauber & Wimer, 2004; Walker, 2006). These studies draw attention to the need for further study of the quality and quantity of academic advising in programs that prepare athletic trainers. Indeed, concerns are also raised in post-secondary education literature about academic advising, including clarification of theoretical models and issues of measurement. Consequently, the lack of knowledge and understanding of the complexity of academic advising in athletic training coupled with an inadequate research base contributed to the purposes for this dissertation. The first and primary purpose of the study was to describe and analyze the perceptions of students enrolled in ATEPs about their academic advising experiences. This included the development of an instrument for collecting data on student perceptions of academic advising. Development of this instrument was based on a review of literature on academic advising, Personal Investment Theory (PIT), and athletic training. Attention was given in the review to careful identification of advising models and definitions that can serve to inform the development of a meaningful instrument. The second purpose for this study was to utilize the collected data from the survey to provide the validation of the instrument.

Specifically, an exploratory factor analysis will be used to examine the manner and degree to which these data support or challenge the academic advising framework modified using PIT. Factor correlations and alpha reliabilities were included as part of the instrument assessment procedure. The following chapter summarizes the dissertation and its findings. Chapter five is divided into sections dealing with a discussion of the study and its findings, limitations and recommendations for future research, and significance of the study.

Discussion

Academic advising research has repeatedly identified the importance of well- defined, implemented, and assessed advising programs as an important component of the students' educational experience. Yet, there remains much debate in the literature over definitions, models, and theories of advising. Further, there has been minimal research on this topic specific to athletic training. The fact that 93% of athletic training program directors invited to participate in the study responded favorably offers an indication of the interest, even importance, of the findings forwarded in this dissertation.

The Student Survey on Academic Advising (SSAA) was developed and validated using sound psychometric methodology. Specifically, items identified for inclusion were based on an extensive and critical review of academic advising, Personal Investment Theory (PIT), and athletic training education literature. The items included on the SSAA contain those that address environmental influences found missing in the student developmental model and embraces conceptual content forwarded within PIT. The SSAA's content was verified by experienced athletic training program directors through critical analysis and field testing. Two pilot runs of the survey instrument were completed prior to administration of the final instrument. The first asked students to evaluate the instrument for its clarity and content. The second pilot was used to

obtain a preliminary data set for factor analysis in order to provide initial validation as well as other important metrics such as response variability. The second pilot was also used to identify and eliminate technical problems that the respondents might have with the electronic format as well as those problems which could arise from the administration end of the survey. Additionally, a panel of experts on advising, who were gathered at a national conference, reviewed and appraised the SSAA positively. Their assessment of support also provided verification of the instrument. Finally, prior to its implementation, Dr. Larry Braskamp examined the survey and offered categorical support for the SSAA's construction. As one of the nation's leading experts on PIT, Braskamp indicated that the items appeared sound and that he was able to identify each of the three parts of the theoretical framework.

The response rate of 81%, which is considered an exceptional return rate for electronic surveys (Dillman, 2000; Couper &Triplett, 2001), was acquired given the administration of the SSAA to 258 athletic training students. The high rate of response suggests evidence for the face validity of the instrument as well as student support and interest in the topic of academic advising. The random sampling design employed by the study generated a representative sample, facilitating the external validity of the study's findings. The respondents reflected a population of students enrolled in athletic training education programs (ATEPs) across the nation. The majority of those who responded were female, Caucasian, of the Millennial generation (i.e., were 18 to 22 years old), and possessed self- reported GPAs of between 3.00 and 3.49. Most reported having a member of the faculty as an advisor although professional advisors were noted and students from both public and private institutions were included.

The analyzed responses to the SSAA generally indicated that academic advising experiences were perceived by athletic training students as being of a high caliber. All but one

item was rated within the range of *somewhat agree* to *strongly agree* on the presented statements. This was somewhat surprising considering that advisors in athletic training report having little if any formal training on how to be effective advisors. Further research may provide insight into the career path of athletic training educators and the ways they are prepared for carrying out advising tasks and responsibilities that students find valuable. Students reported their highest level of agreement with items that describe their advisor as being available, respecting student's opinions, providing direction for exam preparation, and being helpful in identifying and selecting courses. As described in chapter four, many of these attributes align with the prescriptive model of academic advising and is consistent with the information that we know about Millennial students. Conversely, athletic training students reported a lower level of agreement with items that identify their advisor as not as diligent in helping them to manage their emotions, developing study skills, managing their time, and clarifying personal values. These items indicate that advisors may not be as skilled in helping students with these kinds of developmental advising issues. As such, training of advisors should include content such as stress management, study skill development, helping students learn to manage their time, values clarification, and understanding the importance that students place on their advisor related to out of class activities.

Advisors may also need assistance in working with students who are experiencing academic difficulties. The results of analysis of the three factors, *Self*, *Behaviors*, and *Environment*, by student self- reported cumulative GPA suggests that advisors failed to differentiate between academically struggling and successful students. Other aspects of the analysis point to quality of advising given equity in the perceived experiences and given student gender, ethnicity, and institutional type.

The result of the factor analysis with its factor structure explaining 63% of the total variance is encouraging and provides credibility to viewing academic advising through the conceptual lens provided by PIT. All of SSAA's items met all four of the requirements for item inclusion in the instrument: (a) eigenvalues greater than 1.0; (b) at least three items loading on one factor at a .50 or greater level; (c) after rotation the items must load at .30 or greater, and (d) a logical fit of the item to its statistically identified factor. The three factors of *Self*, *Behaviors*, and *Environment* contained items that were appropriate, in addition to the finding that each factor contributed about a third to the total variance explained. A description of each of the factors can be found in chapters one and two. The distribution of how the items load in each factor was detailed in chapter four.

The internal reliability of scores for each of the three factors was excellent with alpha coefficients above .90. Additionally, the inter-factor correlations offered further evidence of the desired psychometrics properties. Specifically, the correlation coefficients, while demonstrating 60% to 70% shared variance, do possess unique variability. The conceptual model offered by PIT suggests that there should be variance in common between the factors of *Self*, *Behaviors*, and *Environment*. This study makes explicit the degree to which the variance is in common for the model. In sum, the analysis of the collected data supports the conclusion of an instrument that is psychometrically and theoretically sound (e.g., clear, consistent, organized, and easy to use). The resulting factor structure both in its content as well as in its theoretical makeup advances a holistic model for academic advising. Indeed, the SSAA offers a model that integrates the traditional prescriptive model of advising with the more recent developmental model.

Limitations and Recommended Research

There are a number of important limitations associated with this study. First, the SSAA is an instrument that measures students' perceptions and opinions about their experiences of academic advising. Self reported data are known to be subjective for a number of reasons. Related to reliability and validity of scores are problems that arise with questions about general perceptions rather than specific descriptive behaviors. In other words, students may over or understate the nature of their academic experiences. Although, it should be noted that there is nothing on the SSAA to suggest that students were influenced to intentionally distort their responses. There were no benefits to students to report other than what they felt as they read the questions. They could, however, be inclined to respond in particular ways given their most recent interaction with their advisor or by a salient experience in their past. Thus, while self reported data are subjective, the analysis of the data in several ways takes such error into consideration. The analysis attended to both issues of central tendency and variability.

Given the weaknesses of self reported data, the results identified by this study or data collected by the SSAA should only be considered part of the picture of the overall effectiveness of an academic advising program. Just as defining academic advising must be viewed holistically (prescriptive and developmental models), assessments of programs or faculty must also be done holistically. Future research to identify and develop the other parts of a comprehensive assessment program needs to be completed. Other assessment strategies that should be considered in order to triangulate student perceptions of the effectiveness of the advising program might include developing an advisor self- assessment tool and exploring the possibility of a peer advising evaluation protocol instrument. Both of those strategies are widely used in teaching assessment programs. Since advising is teaching, there may be parallel strategies.

Another important limitation of the study is related to the theoretical construction of the advising model forwarded in the SSAA. This weakness occurs given the reliance on PIT's conceptual foundation. PIT offers a dynamic and highly inter-relational argument (as described and illustrated by the Venn diagram in chapter two). It is purposeful in allowing a number of the items contained in the instrument to load on more than one factor (as described and illustrated by the Venn diagram in chapter four). This contributes to confusion as to the clear delineation of each item on a factor while trying to support the distinctions in the concepts.

Significance and Conclusion

In conclusion, the significance of this study's attempt to define and assess academic advising for students enrolled in athletic training education programs can be described as practical, substantive, and theoretical. The study described and analyzed the perceptions of students enrolled in ATEPs about their academic advising experiences. These findings provide a baseline for further research and use of the SSAA for assessing academic advising. An abstract of this research titled "Understanding the Importance of Academic Advising in Athletic Training Education" was selected from over 100 submissions through a blinded, peer review process for presentation at the 2009 Athletic Training Educators Conference. Athletic training educators are very much interested in work that advances understanding of teaching and advising issues in the discipline. Through analysis of data obtained from this study, valuable information related to academic advising in ATEPs was provided to inform educators about their role as academic advisors and areas of strength and concern. The significance of this research therefore was practical in that the knowledge gained about students' perceptions of academic advising could potentially contribute to improved quality of the academic experience for students preparing for the athletic training profession.

The study included the development and validation of the SSAA for collecting data on student perceptions of academic advising. Three (3) of the six (6) institutions in the pilot run of the survey have sought permission to use the SSAA and its factor structure to assess the advising in their program. Further, Whitworth University has also adopted the operational definition described in chapter two and is piloting a revised form of the SSAA in the fall of 2008. Therefore, the results from this study are substantive in that they provided an instrument that defines and assesses the ambiguous concept of academic advising as it is related to athletic training education. Potentially, this operational understanding of academic advising could be generalized to other health care professions. The most substantial benefit is clarification and guidance for advisor roles and expectations for academic advising through use of the SSAA to assess targets and program development efforts in the area of advising.

Finally, the collected and analyzed data from the survey supported a holistic three structure model of academic advising forwarded by PIT. Therefore, the results of the study are theoretically significant given their contribution to ongoing argument and investigations of academic advising. The findings of this dissertation point to one path that resolves tensions in the literature pertaining to prescriptive and developmental advising. Indeed, the study provides evidence for the importance, viability, and credibility of a holistic academic advising model containing *Self*, *Behaviors*, and *Environment* for students enrolled in athletic training educational programs.

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Appendix A Student Survey on Academic Advising

Academic Advising for athletic training students can happen in many places and takes many forms. Typically academic advising includes: scheduled appointments in an advisor's office, telephone or email conferences, as well as conversations in the hallway or training room. For the purposes of this survey, academic advising is defined broadly to include items like: course selection, values clarification, career options, self evaluation, and professional preparation for athletic training.

Please evaluate your currently assigned, athletic training education program academic advisor (not frosh advisor, student advisor, or general education advisor) based on your current experiences with this advisor.

Please respond to all of the statements by clicking on the appropriate box.

	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree	Not Applicable
1. My advisor challenges me to identify and establish personal goals.	☐	☐	☐	☐	☐	☐
2. My advisor invites me to explore my duties and responsibilities as an athletic training professional.	☐	☐	☐	☐	☐	☐
3. My advisor encourages me to consider how my personal attributes and characteristics align with my field of study	☐	☐	☐	☐	☐	☐
4. My advisor assists me in establishing realistic academic goals.	☐	☐	☐	☐	☐	☐
5. My advisor assists me in identifying/ clarifying my personal values.	☐	☐	☐	☐	☐	☐
6. My advisor provides ideas and suggestions to help me to manage my time.	☐	☐	☐	☐	☐	☐
7. My advisor challenges me to explore my values as they relate to career choice.	☐	☐	☐	☐	☐	☐

	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree	Not Applicable
8. My advisor helps me to identify educational experiences to enhance my overall professional preparation (i.e. internships, independent studies, clinical experiences).	☐	☐	☐	☐	☐	☐
9. My advisor assists me in identifying employment opportunities that are consistent with my professional goals.	☐	☐	☐	☐	☐	☐
10. My advisor provides social support that contributes to my college experience.	☐	☐	☐	☐	☐	☐
11. My advisor demonstrates respect for my opinions.	☐	☐	☐	☐	☐	☐
12. My advisor responds to my emails and/or phone calls related to academic advising in a reasonable period of time.	☐	☐	☐	☐	☐	☐
13. My advisor takes a personal interest in my academic development.	☐	☐	☐	☐	☐	☐
14. My advisor assists me in identifying and selecting courses.	☐	☐	☐	☐	☐	☐
15. My advisor shares information clearly and accurately.	☐	☐	☐	☐	☐	☐
16. My advisor assists me in developing study skills.	☐	☐	☐	☐	☐	☐
17. My advisor keeps me informed about my academic progress.	☐	☐	☐	☐	☐	☐

	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree	Not Applicable
18. My advisor serves as a positive professional role model for the profession of athletic training.	☐	☐	☐	☐	☐	☐
19. My advisor refers me to additional academic resources if needed.	☐	☐	☐	☐	☐	☐
20. My advisor offers guidance on degree requirements for my program of study.	☐	☐	☐	☐	☐	☐
21. My advisor provides positive reinforcement.	☐	☐	☐	☐	☐	☐
22. My advisor is a good listener.	☐	☐	☐	☐	☐	☐
23. My advisor assists me in understanding the registration process.	☐	☐	☐	☐	☐	☐
24. My advisor is available to me either during scheduled office hours or by individual appointment.	☐	☐	☐	☐	☐	☐
25. My advisor helps me to overcome obstacles related to my academic development (i.e. time management, study skills, financial issues, personal issues).	☐	☐	☐	☐	☐	☐
26. My advisor helps me to manage my emotions.	☐	☐	☐	☐	☐	☐
27. My advisor assists me in identifying my abilities and strengths.	☐	☐	☐	☐	☐	☐
28. My advisor is nurturing (i.e. open warm, welcoming).	☐	☐	☐	☐	☐	☐

	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree	Not Applicable
29. My advisor challenges me to articulate my thoughts and feelings.	☐	☐	☐	☐	☐	☐
30. My advisor encourages me to seek his or her assistance when necessary.	☐	☐	☐	☐	☐	☐
31. My advisor directs me in preparation for national certification exams.	☐	☐	☐	☐	☐	☐
32. My advisor offers guidance related to general education requirements.	☐	☐	☐	☐	☐	☐
33. My advisor demonstrates interest in my activities outside of my classes.	☐	☐	☐	☐	☐	☐
34. My advisor discusses with me college/university policies and procedures (i.e. adding and dropping courses).	☐	☐	☐	☐	☐	☐

Background

A. Year in School

Sophomore ☐

Junior ☐

Senior ☐

B. Gender

Male ☐

Female ☐

C. Type of Advisor

Faculty Member ☐

Professional Advisor ☐

D. Type of Institution

Public ☐

Private ☐

E. Institution Name

(drop down box)

F. Approximate overall Cumulative GPA

(drop down box)

G. Ethnicity

(drop down box)

H. Age

(drop down box)

Appendix B Cover Letter

Athletic Training Student X

University

City, State Zip Code

Dear (Athletic Training Student's name),

We would like to take this opportunity to invite you to assist us in obtaining important information about the topic of academic advising in athletic training. Your input as a student is essential in order for us to understand and enhance the academic advising provided by athletic training educators. We appreciate your assistance with this very important research.

The attached electronic survey has two parts and should take no more than 10 minutes of your time to complete. Part one assesses the level of agreement you have with 34 statements related to your academic advising experiences. Part two provides demographic information. Your opinion about the academic advising you have received from your advisor/professor is considered important for program quality. As a student you may benefit from the results of this study through an enhanced academic advising experience.

You were randomly selected from a list of athletic training students enrolled in CAATE accredited programs from the western United States. Your response to this survey is confidential. No individual will be identified with his or her responses. Each electronic questionnaire is coded so that the researcher can identify non-respondents for follow-up contact. The Institutional Review Board of Washington State University has approved this research project. If you have questions about the study please contact the researcher Russ Richardson at 509-777-3244. If you have questions about your rights as a participant please contact the WSU IRB at 509-335-9661 or irb@wsu.edu. By completing this survey, you are providing consent to participate in this study on academic advising. Your participation in this research is voluntary and you are able to withdraw from this study at any time.

Please complete this electronic survey by clicking on the attached URL (xxxxxxxxxx) by no later than October 13, 2006. Thank you in advance for your participation in this valuable project.

Sincerely,

Russell J. Richardson M.A./ATC

Doctoral Candidate – WSU

Associate Professor

Whitworth College

John Doe Phd/ATC

Program Director

Arizona State University

Appendix C

College or University Name, Institution Type, and Willingness to Participate

College/University Name	Type	Participation
Azusa Pacific University	Private	Yes
Boise State University	Public	Yes
Brigham Young University	Private	Yes
California Lutheran University	Private	Yes
California State University, Fresno	Public	Yes
California State University, Fullerton	Public	Yes
California State University, Long Beach	Public	Yes
California State University, Northridge	Public	Yes
California State University, Sacramento	Public	Yes
Chapman University	Private	Yes
Colorado State University, Pueblo	Public	Yes
Concordia University, Irvine	Private	Yes
Eastern Washington University	Public	Yes

Fort Lewis College	Public	Yes
George Fox University	Private	Yes
Grand Canyon University	Private	Yes
Humboldt State University	Public	Yes
Linfield College	Private	Yes
Mesa State College	Public	Yes
Metropolitan State College of Denver	Public	Yes
New Mexico State University	Public	Yes
Northern Arizona University	Public	Yes
Oregon State University	Public	Yes
San Diego State University	Public	No
San Jose State University	Public	No
Southern Utah University	Public	Yes
University of Idaho	Public	Yes
University of LaVerne	Private	Yes
University of Montana	Public	Yes
University of Nevada, Las Vegas	Public	Yes
University of New Mexico	Public	No

University of Northern Colorado	Public	Yes
University of the Pacific	Public	Yes
University of Utah	Public	Yes
University of Wyoming	Public	Yes
Vanguard University	Private	Yes
Washington State University	Public	Yes
Weber State University	Public	Yes
Whitworth University	Private	Yes

Appendix D

Descriptive data including response numbers, means, and standard deviations for each item on the SSAA instrument

	n	$\bar{x}$	*SD*
1. My advisor challenges me to identify and establish personal goals.	207	1.98	1.01
2. My advisor invites me to explore my duties and responsibilities as an athletic training professional.	208	1.80	.98
3. My advisor encourages me to consider how my personal attributes and characteristics align with my field of study	207	2.1	1.1
4. My advisor assists me in establishing realistic academic goals.	207	1.90	1.05
5. My advisor assists me in identifying/clarifying my personal values.	205	2.49	1.12

	n	$\bar{x}$	*SD*
6. My advisor provides ideas and suggestions to help me to manage my time.	205	2.36	1.14
7. My advisor challenges me to explore my values as they relate to career choice.	207	2.23	1.08
8. My advisor helps me to identify educational experiences to enhance my overall professional preparation (i.e. internships, independent studies, clinical experiences).	208	1.68	.99
9. My advisor assists me in identifying employment opportunities that are consistent with my professional goals.	204	2.0	1.03
10. My advisor provides social support that contributes to my college experience.	206	2.18	1.17
11. My advisor demonstrates respect for my opinions.	208	1.58	.85
12. My advisor responds to my emails and/or phone calls related to academic advising in a reasonable period of time.	205	1.34	.74

	n	$\bar{x}$	*SD*
13. My advisor takes a personal interest in my academic development.	208	1.70	.95
14. My advisor assists me in identifying and selecting courses.	207	1.6	.86
15. My advisor shares information clearly and accurately.	207	1.7	.88
16. My advisor assists me in developing study skills.	201	2.52	1.12
17. My advisor keeps me informed about my academic progress.	204	2.24	1.10
18. My advisor serves as a positive professional role model for the profession of athletic training.	205	1.6	.93
19. My advisor refers me to additional academic resources if needed.	202	1.81	.91
20. My advisor offers guidance on degree requirements for my program of study.	208	1.63	.92
21. My advisor provides positive reinforcement.	208	1.71	.90
22. My advisor is a good listener.	208	1.62	.94

	n	$\bar{x}$	*SD*
23. My advisor assists me in understanding the registration process.	203	1.81	.97
24. My advisor is available to me either during scheduled office hours or by individual appointment.	208	1.33	.67
25. My advisor helps me to overcome obstacles related to my academic development (i.e. time management, study skills, financial issues, and personal issues).	200	2.12	1.06
26. My advisor helps me to manage my emotions.	178	2.65	1.15
27. My advisor assists me in identifying my abilities and strengths.	203	2.25	1.12
28. My advisor is nurturing (i.e. open warm, welcoming).	206	1.93	1.09
29. My advisor challenges me to articulate my thoughts and feelings.	202	2.17	1.05
30. My advisor encourages me to seek his or her assistance when necessary.	206	1.63	.94

	n	$\bar{x}$	*SD*
31. My advisor directs me in preparation for national certification exams.	204	1.58	.88
32. My advisor offers guidance related to general education requirements.	200	1.82	.98
33. My advisor demonstrates interest in my activities outside of my classes.	204	2.26	1.24
34. My advisor discusses with me college/university policies and procedures (i.e. adding and dropping courses).	207	2.09	1.06

Appendix E

Student responses and percentage of response for each item in the SSAA

	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree	Not Applicable
1. My advisor challenges me to identify and establish personal goals.	#76 36.7%	#88 42.5%	#19 9.1%	#20 9.6%	#4 1.9%	#2 -
2. My advisor invites me to explore my duties and responsibilities as an athletic training professional.	#97 46.6%	#78 37.5%	#15 7.2%	#13 6.2%	#5 2.4%	#1 -
3. My advisor encourages me to consider how my personal attributes and characteristics align with my field of study	#77 37.1%	#66 31.8%	#35 16.9%	#24 11.5%	#5 2.4%	#2 -
4. My advisor assists me in establishing realistic academic goals.	#97 46.8%	#54 26%	#40 19.3%	#10 4.8%	#6 2.8%	#2 -
5. My advisor assists me in identifying/clarifying my personal values.	#41 20%	#71 34.6%	#56 27.3%	#25 12.1%	#12 5.5%	#4 _

	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree	Not Applicable
6. My advisor provides ideas and suggestions to help me to manage my time.	#52 25.3%	#72 35.1%	#43 20.9%	#27 13.1%	#10 4.8%	#2 -
7. My advisor challenges me to explore my values as they relate to career choice.	#56 27%	#85 41%	#40 19.3%	#15 7.2%	#11 5.3%	1 -
8. My advisor helps me to identify educational experiences to enhance my overall professional preparation (i.e. internships, independent studies, clinical experiences).	#121 58.1%	#53 25.4%	#20 9.6%	#8 3.8%	#6 2.9%	#1 -
9. My advisor assists me in identifying employment opportunities that are consistent with my professional goals.	#76 37.3%	#78 38.2%	#30 14.7%	#14 6.7%	#6 2.9%	#5 -
10. My advisor provides social support that contributes to my college experience.	#74 35.9%	#61 29.6%	#41 19.9%	#19 9.2%	#11 5.3%	#3 -
11. My advisor demonstrates respect for my opinions.	#121 58.1%	#62 29.8%	#17 8.1%	#5 2.4%	#3 1.4%	#1 _

	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree	Not Applicable
12. My advisor responds to my emails and/or phone calls related to academic advising in a reasonable period of time.	#155 75.6%	#38 18.5%	#6 2.9%	#3 1.4%	#3 1.4%	#4 -
13. My advisor takes a personal interest in my academic development.	#115 55.3%	#56 26.9%	#24 11.5%	#10 4.8%	#3 1.4%	#1 _
14. My advisor assists me in identifying and selecting courses.	#121 58.5%	#60 28.9%	#16 7.7%	#8 3.8%	#2 .9%	#2 -
15. My advisor shares information clearly and accurately.	#107 51.7%	#67 32.3%	#22 10.6%	#10 4.8%	#1 .4%	#1 -
16. My advisor assists me in developing study skills.	#39 19.4%	#70 34.8%	#52 25.9%	#29 14.4%	#11 5.5%	#8 -
17. My advisor keeps me informed about my academic progress.	#60 29.4%	#72 35.3%	#41 20%	#24 11.8%	#7 3.4%	#5 -
18. My advisor serves as a positive professional role model for the profession of athletic training.	#126 61.5%	#50 24.4%	#17 8.3%	#8 3.9%	#34 1.9%	#2 -
19. My advisor refers me to additional academic resources if needed.	#90 44.5%	#75 37.1%	#23 11.4%	#13 6.4%	#1 .5%	#7 -

	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree	Not Applicable
20. My advisor offers guidance on degree requirements for my program of study.	#122 58.7%	#57 27.4%	#16 7.7%	#10 4.8%	#3 1.4%	#1 -
21. My advisor provides positive reinforcement.	#107 51.4%	#66 31.7%	#25 12%	#7 3.4%	#3 1.4%	#1 -
22. My advisor is a good listener.	#126 60.6%	#48 23%	#22 10.5%	#9 4.3%	#3 1.4%	#1 -
23. My advisor assists me in understanding the registration process.	#98 48.2%	#60 29.5%	#32 15.8%	#10 4.9%	#3 1.5%	#5 -
24. My advisor is available to me either during scheduled office hours or by individual appointment.	#154 74%	#43 20.7%	#6 2.9%	#4 1.9%	#1 .4%	#1 -
25. My advisor helps me to overcome obstacles related to my academic development (i.e. time management, study skills, financial issues, personal issues).	#71 35.5%	#64 32%	#39 19.5%	#23 11.5%	#3 1.5%	#9 -
26. My advisor helps me to manage my emotions.	#36 20.2%	#41 23%	#64 35.9%	#24 13.5%	#13 7.3%	#30 -
27. My advisor assists me in identifying my abilities and strengths.	#60 29.6%	#75 36.9%	#34 16.7%	#26 12.8%	#8 3.9%	#5 -

	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree	Not Applicable
28. My advisor is nurturing (i.e. open warm, welcoming).	#92 44.7%	#63 30.6%	#32 15.5%	#10 4.8%	#9 4.3%	#3 -
29. My advisor challenges me to articulate my thoughts and feelings.	#62 30.7%	#73 36.1%	#41 20.3%	#22 10.9%	#4 1.9%	#7 -
30. My advisor encourages me to seek his or her assistance when necessary.	#121 58.7%	#56 27.1%	#16 7.8%	#9 4.4%	#4 1.9%	#2 -
31. My advisor directs me in preparation for national certification exams.	#123 60.2%	#56 27.5%	#15 7.3%	#7 3.4%	#3 1.4%	#5 -
32. My advisor offers guidance related to general education requirements.	#97 48.7%	#56 28.1%	#36 18%	#7 3.5%	#4 2.0%	#8 -
33. My advisor demonstrates interest in my activities outside of my classes.	#73 35.8%	#55 26.9%	#42 20.6%	#19 9.3%	#15 7.4%	#5 -
34. My advisor discusses with me college/university policies and procedures (i.e. adding and dropping courses).	#68 32.8%	#83 40.1%	#34 16.4%	#13 6.3%	#9 4.3%	#2 -