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The Impact of Leadership Styles in Athletic Training Education Programs on Athletic Training Students' Competence

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THE IMPACT OF LEADERSHIP STYLES IN ATHLETIC TRAINING EDUCATION PROGRAMS ON ATHLETIC TRAINING STUDENTS' COMPETENCE

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Title: The Impact of Leadership Styles in Athletic Training Education Programs on Athletic Training Students' Competence

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The purpose of this quantitative study was to examine whether leadership styles of athletic training educators were significant predictors of competence of athletic training students. Specifically, transformational leadership and situational leadership theories were investigated to determine if they could be predictors of competence as measured by the first-time pass rate of the Board of Certification (BOC) exam. The BOC exam is the competency measure utilized in the profession of athletic training; only after athletic training students graduate from an accredited program and have passed the BOC exam are they legally allowed to practice as a certified athletic trainer. Further, the Commission on Accreditation of Athletic Training Education considers first-time pass rates of the BOC exam a measure of program success.

Results indicated that neither transformational leadership nor situational leadership behaviors of educators were significant predictors of athletic training students' competence. However, one factor of transformational leadership

(*behaviors)* was found to be a significant predictor of athletic training students' competence. The study also found that SAT scores and age of the student when taking the BOC exam were significant predictors of the BOC exam pass rate. As SAT scores increased, so did the odds of passing the BOC exam on the first attempt. Further, as the students age increased, the likelihood of passing the BOC exam on the first attempt decreasd.

This study was significant due to the prescriptive literature that exists in athletic training education. Literature suggests that athletic training students who are exposed to transformational leadership and situational leadership in their programs are more likely to be successful and, therefore, competent as entry-level certified athletic trainers. This study set out to bridge the gap between the prescriptive literature and lack of empirical evidence supporting the claim.

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CHAPTER 1

INTRODUCTION

Historical background

Athletic training is an allied health profession that works with athletes and physically active individuals. Athletic trainers are those individuals who are certified and considered competent to evaluate, treat, and provide rehabilitative services to their clientele (Prentice, 2011). Specifically, the domains of athletic training include prevention of injury; clinical evaluation and diagnosis of injuries; immediate care of injuries; treatment, rehabilitation, and reconditioning of injuries; organization and administrative responsibilities; and professional responsibilities of maintaining certification requirements. Athletic trainers receive a minimum of a bachelor's degree from an accredited athletic training education program (ATEP). Education standards are based on the six previously mentioned domains of athletic training.

The Commission on Accreditation of Athletic Training Education (CAATE) is the accrediting body that governs over 300 entry-level ATEPs in the United States. Through its governance, the CAATE sets educational standards that provide ATEPs with the minimal guidelines for athletic training students to graduate from an undergraduate ATEP. The CAATE acts in conjunction with the National Athletic Trainers' Association (NATA) and the Board

of Certification (BOC) to develop the criteria for certifying athletic trainers. Standards established for ATEPs are competency-based and are the property of the NATA. The NATA has established these competency-based standards based on what they define as the responsibilities of an entry-level athletic trainer (http://www.caate.net/). These standards are measured through didactic (classroom) instruction as well as clinical competencies. Athletic training students are taught these standards in the classroom and are expected to successfully complete skills associated with these standards during their clinical experience. Once an athletic training student has successfully completed these standards in an accredited ATEP, they are then eligible to sit for the BOC exam. It is only when both of these objectives are met (completion and graduation from an accredited ATEP and passing of the BOC exam) that individuals may identify themselves and practice as a certified athletic trainer.

The BOC and its Role Delineation Study (2010), is the means by which individuals are identified as being competent to practice as a certified athletic trainer (ATC). The BOC exam is comprised of two parts. The first part assesses didactic (classroom based knowledge) competency and the second part assesses clinical (skill) competency. The written section focuses on didactic competency, which tests how well the

athletic training student knows the material. The written simulation section of the BOC assess how well the athletic training student can apply skills such as identifying anatomical reference points and diagnosing an injury. The Role Delineation Study is charged with ensuring that the BOC exam is content-valid (BOC); content on the exam assesses the knowledge and skills reflective of the tasks performed by an athletic trainer. Content-validity is determined through annual reviews of tasks, importance, criticality, and relevance to practice as an athletic trainer. Further, development and review of the BOC follows a logical and researched process reflective of federal regulations such as *Uniform Guidelines on Employee Selection Procedures*; *Standards for Educational and Psychological Testing;* and *Accreditation of Certification Programs* (as cited in the Role Delineation Study, 6th ed.).

Problem statement

Leadership effectiveness in athletic training education is not clearly operationalized because it has not been empirically tested as in other allied health education programs such as nursing (Daley, Menke, Kirkpatrick, Sheets, 2008; Hanson and Stenvig, 2008).Further, it is not clear how leadership can impact athletic training education students in preparing for an entry-level position. The purpose of this research is to identify the types or styles of leadership (independent

variable) that athletic training students are exposed to while enrolled in their ATEP and if there is a relationship between these leadership styles and competence of athletic training students (dependent variable) as measured by the BOC exam.

Literature related to leadership styles usefulness in education exists suggesting that athletic training educators and athletic training education programs are successful when engaging in transformational (Laurent and Bradney, 2007), situational (Meyer, 2002), path-goal, and team (Kutz, 2008) leadership behaviors. Transformational leadership is an organizational-centered leadership style in that it promotes changing the values, beliefs, and mission of students to reflect those of the institution (Conger, 1999; Pittinsky and Simon, 2007; Yukl, 1999). Further, transformational leadership in education rests on leaders' abilities to promote extra efforts (Conger; Lowe, Kroeck, and Sivasubramaniam, 1996; Pounder, 2008; Yukl) from students to engage in outside the classroom learning opportunities.

Situational leadership is a student-centered style of leadership that relies on leaders' ability to provide appropriate feedback and support to students based on need (Blanchard, Zigarmi, and Nelson, 1993; Gardner and Harrelson, 2002; Graeff, 1983; Vecchio and Boatwright, 2002). However, it cannot be assumed that all athletic training education program

educators possess these types of leadership styles. Further, it cannot be assumed that exposure to these leadership styles will improve competence of athletic training students. This worldview suggests that there is no absolute truth (Creswell, 2009) between leadership style and competence. Rather, a relationship could exist between leadership styles that students are exposed to in their ATEP and athletic training student competence, but may not be evident in every situation.

Path-goal theory is a leadership style that rests on the leaders ability to help constituents achieve their goals, be satisfied in their position, as well as successful (House, 1996;Schriesheim and Neider, 1996). Leaders who engage in path-goal behavior may need to help constituents through conflict, obstacles that may impede their progress, and other hindering variables (Schriesheim and Neider, 1996) that may threaten goal achievement.

Lastly, literature in athletic training suggests that team leadership behavior could be effective in successfully leading constituents. Much like path-goal theory, evidence is lacking in two areas. First, the most appropriate indices are not universally agreed upon. Second, the indices that have been tested do not assess team leadership according to the two tenants that claim to be associated with the leadership style. Team leadership tenants include the leader’s ability to

collaborate with constituents and treat them as equals with equal opportunities (McGrath, Arrow, and Berdahl, 2000; York-Barr and Duke, 2004; Zaccaro, Rittman, and Marks, 2001).

Currently, empirical evidence supporting the appropriate tool to measure path-goal and team leadership styles is conflicting; therefore, path-goal and team leadership styles will not be assessed in this research as a means by which to measure leadership effectiveness in an ATEP.

Purpose statement

The purpose of this research is to determine if there is a relationship between leadership styles that athletic training students are exposed to in athletic training education programs and athletic training students' competence as measured by the first time pass rates on the Board of Certification exam (BOC). This research focuses on assessing leadership exposure of the ATEP as a whole (as opposed to assessing an individual leader in the ATEP), which reflects the aggregate leadership profile of the ATEP. Literature (Laurent and Bradney, 2007; Meyer, 2002; Kutz, 2008) suggests four styles of leadership (transformational leadership, situational leadership, path-goal leadership, and team leadership) that can be effective in motivating athletic training students to improve competence in order to practice as an athletic trainer. Competence in athletic training is measured by the BOC exam; first time pass rates for athletic training

education programs is a measure of program success. The CAATE's annual report includes the results of the BOC exam from a national perspective, which is based on students' first attempt on the BOC exam.

Determining the degree to which athletic training students are exposed to leadership styles and how these styles relate to competence as measured by the BOC exam can offer insight for athletic training educators in regard to effective motivational behaviors that can impact student competence as well as program success.

Need for research

There are several common themes throughout the literature review of this proposal that argue the need for researching leadership impact on student competency (as measured by the BOC) in ATEPs. First, literature in athletic training education (Laurent and Bradney, 2007; Meyer, 2002; Kutz, 2008) provides prescriptive models for educators in ATEPs to follow. However, these models have not been empirically tested in athletic training education. Second, transformational leadership (Bolkan and Goodboy, 2009) and situational leadership (Fernandez and Vecchio, 1997) as they relate to student competence have been quantitatively measured through the use of the Multifactor Leadership Questionnaire and the Leadership Behavior Descriptive Questionnaire Form XII (LBDQ-XII), respectively, in a

communication course and in business administration education, but not in athletic training education. This research will help bridge the gaps between prescriptive literature in athletic training education and empirical support. Further, determining the impact that particular leadership styles have on student competence can help ATEPs direct their attention toward these particular leadership styles to help improve student outcomes (Robinson, Lloyd, and Rowe, 2008). For example, if particular leadership styles have evidence of promoting student competence, ATEPs can help educators become better leaders and improve student competence as measured by the BOC exam.

Research question

Do athletic training students who are exposed to transformational and situational leadership behaviors from educators in their ATEP relate to student competence as measured by the BOC exam?

Research hypothesis

1. Athletic training students who are exposed to transformational leadership behavior from educators in their ATEP are more likely to pass the BOC exam on their first attempt. This hypothesis is rooted in literature (Conger, 1999; Lowe, Kroeck, Sivasubramaniam; Pounder, 2008; Yukl, 1999), which suggests that transforming students' work ethic to improve extra effort can lead to

positive student outcomes; in this research, student outcomes is reflective of competence as measured by the BOC exam. This hypothesis is also based on quantitative research that supports transformational leadership as a positive influencer on student outcomes (Bolkan and Goodboy, 2009; Pounder, 2008)

2. Athletic training students who are exposed to situational leadership behavior from educators in their ATEP are more likely to pass the BOC exam on their first attempt. This hypothesis is grounded on literature that suggests the need to treat students according to maturity level and knowledge base (Meyer, 2002) as well as empirical research (Fernandez and Vecchio, 1997; Hanson and Stenvig, 2008; Vecchio and Boatwright, 2002)that supports situational leadership as a means for positive outcomes.
3. Athletic training students who are exposed to more than one leadership style from educators in their ATEP are more likely to pass the BOC exam on their first attempt. Given the justification that each of the leadership styles has potential of helping students gain competence, a logical conclusion is that exposure to a combination of these leadership styles would also improve competence as measured by the BOC exam.

Significance of the study

A measure of competence in athletic training education is the passing of the BOC exam. Additionally, the national average pass rate is determined by the CAATE and based on the first attempt of the BOC exam. Determining if a relationship exists between athletic training students' exposure to leadership styles in their ATEP and first time pass rates can help athletic training educators better prepare competent athletic trainers. Further, determining an effective aggregate leadership profile of an ATEP can help promote the successfulness of the institution.

Definition of terms

Athletic trainer – an allied health care provider who has met the eligibility requirements and has demonstrated an acceptable level of competence in the identified performance domains:

1. Prevention
2. Clinical Evaluation and Diagnosis
3. Immediate Care
4. Treatment, Rehabilitation, and Reconditioning
5. Organization and Administration
6. Professional Responsibility

(Board of Certification, 2010).

Board of Certification (BOC) – organization responsible for identifying individuals who are competent in the profession

of athletic training. Further, the BOC is responsible for the development, validation, and reliability of the athletic training examination; passing of the BOC is the indication that athletic trainers are competent in the performance domains.

Competence – the knowledge and skill level achieved by an individual that is considered acceptable to practice as an entry-level athletic trainer. This is measured through the BOC exam (Board of Certification, 2010).

Leadership – ability of individuals to influence or motivate a student or group of students in achieving an established and common goal or goals (Kutz, 2008; Laurent and Bradney, 2007; Meyer, 2000; Meyer, 2002; Zilembo and Monterosso, 2008).

Assumptions

1. The Board of Certification exam is a valid and reliable means of measuring athletic trainers' competence.
2. Athletic trainers who participate in the study are answering the questions honestly and accurately.
3. A common goal of athletic trainers is to pass the BOC exam on the first attempt.

Limitations

1. This is a quasi-experimental design. There is no pre-test, treatment or intervention that would allow prior competence level to be determined.
2. The BOC exam is a standardized examination.
3. Some athletic training students may have participated in a mock BOC exam program or preparation program, which could impact the level of their readiness to take a standardized exam. Those students who did not participate in such a program may not be as comfortable sitting for the BOC exam the first time. This limitation can be addressed through controlling for such experience in preparation or mock BOC exam programs.
4. Some athletic training students may not immediately take the BOC exam after graduation; therefore, factors other than leadership may impact these students' competence and ability to pass the BOC exam.

Delimitations

1. The sample for this research is athletic trainers in District 2 of the National Athletic Trainers' Association.
2. The sample is generated from the National Athletic Trainers' Association's District 2 Membership Directory. Not all athletic trainers are members of the National

Athletic Trainers' Association; therefore, some athletic trainers will not be polled due to sampling restrictions.

Theoretical perspective

Literature suggests that leadership in the classroom as well as during the clinical experience is needed to promote student learning and competency in education programs (Bolkan and Goodboy, 2009; Gardner and Harrelson, 2002; Meyer, 2002; Pounder, 2008; York-Barr and Duke, 2004). However, the literature fails to provide the classroom educator and the clinical educator with empirical and practical support for how leadership can be implemented or which style of leadership is most effective for student success. The foundation of this proposal rests on understanding the influence that transformational and situational leadership theories have on student competence. Appendix A provides a matrix for each of the above leadership theories, its academic proponents, and a definition. Although path-goal leadership and team leadership styles are not being empirically tested in this research, they are included in Appendix A for reference and comparison because they are frameworks referenced in athletic training education literature.

James MacGregor Burns developed transformational leadership in 1978 at which time it became evident that it was an important approach to effective leadership (Northouse, 2007). This is the

first leadership theory I will use to explain how competence in athletic training students can be improved. Transformational leadership is used to study organizational effectiveness (Conger, 1999). The theory indicates that organizations can improve their intended outcomes and productivity if leaders develop relationships with constituents. The relationship should focus on leader commitment, putting aside self-interest, taking into consideration constituent needs, and helping constituents exceed their expectations. As applied to my study, transformational leadership theory holds that I would expect this theory to influence or explain first time pass rates on the Board of Certification (BOC) exam; the measure of competence of certified athletic trainers (Bolkan and Goodboy, 2009).

Situational leadership theory is the next theoretical construct used in this research. Hersey and Blanchard constructed situational leadership theory in 1969 (Fernandez and Vecchio, 1997; Graeff, 1983; Northouse, 2007) to improve organization leadership effectiveness. The theory posits that effective organization leadership helps organizations meet expected goals. Through building relationships with constituents, leaders should base their behavior on each constituent's need, be flexible, and acknowledge that each constituent is unique in his or her competence level (Blanchard, Zigarmi, and Nelson, 1993; Graeff, 1983; Gardner and Harrelson,

2002; Vecchio and Boatwright, 2002). Situational leadership differs from transformational leadership in that it is constituent-centered. It is the leaders' responsibility to provide the appropriate feedback to constituent based on his or her need(s) as well as what the situation warrants. For example, a student who has less maturity in his or her education and has less knowledge base needs more directive behavior (detailed and hands-on instruction). In contrast, a student who has a higher level of maturity at the institution and a higher level of knowledge, will require less interaction and more hands-off, supportive, and encouragement behavior from the leader. As applied to my study, situational leadership theory holds that I would expect this leadership style to improve competence of athletic training students and, therefore, improve first time pass rates of the BOC exam because each athletic training student has unique learning styles, learns at different rates, and needs an educator who can recognize and provide the appropriate behavior.

CHAPTER 2

REVIEW OF THE LITERATURE

Chapter overview

The following is a review of the literature relating to leadership practices and their effects on student competence. This chapter provides a historical background on transformational and situational leadership theories. Further, the chapter discusses how particular behaviors from each of these leadership theories contribute to student learning and competence. This information will be used to justify the need to research the effects of leadership behaviors employed by athletic training educators on competence of athletic training students as measured by the Board of Certification (BOC) exam.

The review of the literature also provides current leadership practices, the significance of the study for athletic training education programs (ATEPs), and the conceptual framework that this research is based upon. Current leadership practices will focus on empirical evidence relating to transformational and situational leadership. Further, the conceptual framework will provide the theoretical backing for this research proposal. This chapter ends with a brief summary of the review of the literature.

Historical background

There is a considerable amount of literature suggesting that leadership is needed to promote student learning and competency in the classroom as well as during their clinical experience (Bolkan and Goodboy, 2009; Gardner and Harrelson, 2002; Meyer, 2002; Pounder, 2008; York-Barr and Duke, 2004). However, the literature fails to provide educators with empirical and practical support for how leadership can be implemented or which style of leadership is most effective for student success. This literature review will synthesize leadership theory in allied health education programs and demonstrate how leadership theory can be put into practice to influence learning and competency in athletic training education. The leadership theories reviewed are transformational leadership and situational leadership theories.

Applying a leadership theory without understanding its tenants, assumptions, and limitations is inadvisable as doing so can limit the effectiveness of the leader as well as confine the abilities of the athletic training student. Laurent's and Bradney's (2007) explanation regarding transformational leadership is ambiguous and suggests that leadership practices are limited to five behaviors. Situational leadership in athletic training education (ATE) (Meyer, 2002) suggests that four behaviors are adequate in leading athletic training

students. With that said, each of these leadership theories possess tenants that argue in support of their impact on student learning and competence.

The foundation of this proposal rests on acknowledging the tenants of transformational and situational leadership theories that can contribute to student competence. A visual theory model of these leadership styles and how they can affect competency is provided in Appendix B.

Conceptual framework

Literature suggests that leadership in the classroom as well as during the clinical experience is needed to promote student learning and competency in education programs (Bolkan and Goodboy, 2009; Gardner and Harrelson, 2002; Meyer, 2002; Pounder, 2008; York-Barr and Duke, 2004). However, the literature fails to provide the classroom educator and the clinical educator with empirical and practical support for how leadership can be implemented or which style of leadership is most effective for student success. The foundation of this proposal rests on understanding the influence that transformational and situational leadership theories have on student competence. Appendix A provides a matrix for each of the above leadership theories, its academic proponents, and an operational definition.

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constituent's need, be flexible, and acknowledge that each constituent is unique in his or her competence level (Blanchard, Zigarmi, and Nelson, 1993; Graeff, 1983; Gardner and Harrelson, 2002; Vecchio and Boatwright, 2002).

Situational leadership differs from transformational leadership in that it is constituent-centered; in ATE, the focus is placed on the need(s) of the athletic training student instead of educators' needs and the institutional visions or mission. It is the leaders' responsibility to provide the appropriate feedback to constituents based on their need(s) as well as what the situation warrants. For example, a student who has less maturity in their education and has less knowledge base needs more directive behavior (detailed and hands-on instruction). In contrast, a student who has a higher level of maturity at the institution and a higher level of knowledge, will require less interaction and more hands-off, supportive, and encouragement behavior from the leader. As applied to my study, situational leadership theory holds that I would expect this leadership style to improve competence of athletic training students and, therefore, improve first time pass rates of the BOC because each athletic training student has unique learning styles, learns at different rates, and needs an educator who can recognize and provide the appropriate behavior.

Current practices

The following is a discussion of current leadership practices employed by educators and how they may impact student outcomes. Transformational leadership is a behavior that a leader may engage in (consciously or subconsciously) and is exemplified when the leader clearly shares the vision, beliefs, and values of the organization (Lowe, Kroeck, Sivasubramaniam, 1996). Further, the leader takes into account the needs of the followers in an effort to motivate followers to work towards the vision, beliefs, and values established. In doing so, it is argued that leaders have the ability to help followers exceed their expectations (Conger, 1999; Lowe, Kroeck, Sivasubramaniam; Yukl, 1999) and, therefore, have a positive impact on predetermined outcomes.

Transformational leadership can positively impact student learning, student participation, and overall student satisfaction (Bolkan and Goodboy, 2009; Pounder, 2008). In a quantitative study conducted by Bolkan and Goodboy, cognitive learning, affective learning, state motivation, student communication satisfaction, competence, goodwill, and trustworthiness were variables measured to determine the impact of transformational leadership from educators on students. Bolkan and Goodboy concluded that all measured variables significantly related to positive student learning outcomes,

student participation, and perceptions of teacher credibility. Pounder (2008) conducted a study measuring transformational leadership impact on students' learning outcomes. It was concluded that educators who are effective in eliciting extra effort from students positively impacts student-learning outcomes. Extra effort was operationalized in this study by students' perceptions of the educator's ability to push students beyond what they felt they could achieve.

Situational leadership is constituent-centered and based on behavior elicited by the leader to meet the needs of the constituent as opposed to focusing on the vision or mission of the institution. The behavior is determined through the leader's ability to recognize the constituent's maturity level and knowledge level and then provide the appropriate feedback that suites the situation posed to the student (Graeff, 1983; Vecchio, 1987). Appropriate feedback is based on directive or supportive behavior (Blanchard, Zigarmi, and Nelson, 1993). Leaders have the responsibility to provide directive behavior if the constituent is less mature and has minimal knowledge for the given situation. For example, if the situation is one that the student has not been formally instructed in, the leader should provide detailed instruction and potential hands on help to improve student's learning. In contrast, the leader provides supportive behavior if the maturity level and knowledge base of

the constituent is high enough to handle the situation with autonomy. For example, a student who is in his or her last year of education and has been exposed to several clinical situations may need less detailed instruction and less hands-on assistance. The leader is expected to provide support and encouragement, intervening when the student asks or when the educator feels it appropriate. Gardner and Harrelson (2002) suggest that situational leadership can take a student through a spectrum of incompetence to competence. However, empirical evidence does not exist to support this claim.

The Leader Behavior Description Questionnaire is a quantitative tool used to measure leaders' style, flexibility, and effectiveness (Blanchard, Zigarmi, and Nelson, 1993). It measures two primary tenants of situational leadership, 1) structure and 2) consideration. Although this tool has not been empirically tested in academia, it has shown to support a high correlation between high leader effectiveness and employee satisfaction in business organizations (Blanchard, Zigarmi, and Nelson).

Critique of leadership literature in athletic training education

The following is a critique of the literature pertaining to leadership in athletic training education. Leadership literature in athletic training education provides prescriptive models for educators in ATEPs. In other words, the literature provides

models that are suggestive of appropriate leadership, but fail to provide practical solutions of how to apply them or empirical support of their effectiveness. This critique provides an overview of the literature, the assumptions made, as well as the tenants that can be useful for athletic training educators to be effective leaders.

Definition of Leadership

Defining leadership has been attempted by many scholars and has revealed about as many different interpretations. Therefore, commonalities among allied health education leadership scholars is used for this paper when referring to athletic training leadership. Leadership is defined as educators' ability to influence a student or group of students in achieving a common goal or goals (Kutz, 2008; Laurent and Bradney, 2007; Platt, 2000; Meyer, 2002; Zilembo and Monterosso, 2008).

Transformational Leadership

Laurent and Bradney (2007) suggest that athletic training educators exhibit transformational leadership behaviors because they influence others based on authority, position, skills, and traits. Conceptual concerns regarding this approach are misleading and need further attention. Athletic training educators, specifically program directors (PDs) and clinical instructors (CIs), are placed in a position of authority to make decisions regarding the administration and direction of the ATEP

as well as athletic training student development. This position of authority (Laurent and Bradney) should not be confused with the ability to be an effective leader.

Transformational leaders are able to influence and inspire followers to set aside self-interests, exceed expectations, and conform to values and beliefs of the organization because followers want to conform (Conger, 1999; Lowe, Kroeck, and Sivasubramaniam, 1996; Yukl, 1999). Further, transformational leaders make events meaningful for followers (Yukl), set out to meet the needs of their followers (Conger; Lowe, Kroeck, and Sivasubramaniam, 1996), and set their own personal interests aside and focus on the good of the entire organization (Conger; Lowe, Kroeck, and Sivasubramaniam).

Applying this theoretical construct to athletic training leadership behaviors (Laurent and Bradney, 2007) should be done with caution due to the lack of clarity in current athletic training education leadership literature. Laurent and Bradney developed a self-assessment tool that leaders complete in an effort to measure leaders' effectiveness. However, the Multifactor Leadership Questionnaire (MLQ) appears to be the instrument of choice among leadership scholars because of its popularity in leadership research and organizational assessment (Lowe, Kroeck, and Sivasubramaniam, 1996). Both instruments quantitatively measure leaders' behavior; however the MLQ is

completed by the constituent and reflects his or her perceptions of effective leader behavior. Further, caution should be taken in assuming that the MLQ is an appropriate leadership tool in athletic training education due to the lack of empirical support in the discipline.

Follower perceptions of effective leadership are not considered with transformational leadership in Laurent's and Bradney's model. Therefore, applying the leadership concept represented in their model raises issues that athletic training educators should consider prior to accepting this approach in leading athletic training students. First, athletic training educators, by engaging in this style of leadership, are limiting the abilities of athletic training students. Transformational leaders, although they focus on the followers, may not have the best interest of the followers in mind. According to the transformational leader concept, the leader should attempt to convert the values, beliefs, and emotions (Yukl, 1999) of the follower to conform to those of the organization. This approach makes several assumptions. One assumption is that athletic training students are willing to convert to different values, beliefs, and emotions. Further, the theory does not elaborate on what athletic training educators should do when athletic training students do not comply with the convergence. Another assumption is that athletic training educators have the ability,

knowledge, and desire to transform athletic training students. Further, Laurent and Bradney (2007) do not specify what the outcome (variable) of the transformation is. Yet another assumption is that athletic training educators are transforming the athletic training students for the appropriate reason.

Another limitation is that transformational leadership concept is its lack of consistent empirical researchremains largely unresearched and what research has been conducted is inconclusive. Inconsistencies include various levels of analysis (Hunt and Conger, 1999) (lower level, middle level, and higher level leaders), multiple measuring instruments being used (modified and reconstructed instruments), and inconsistencies in perceptions and interpretation of questionnaires. Further, transformational leadership lacks support at the macro level (Lowe, Kroeck, and Sivasubramaniam, 1996); for example, leaders at the national level. Therefore, suggesting that athletic training educators are transformational leaders at a global level is not supported. This argument suggests that transformational leadership should be applied at the institutional (ATEP) level at most until further evidence supports its effectiveness at higher levels in athletic training education. Even at the institutional level, transformational leadership effectiveness is challenged.

Despite limitations of the transformational leadership approach, it has implications that can be beneficial to athletic training educators. The general concept of transformational leadership acknowledges the need for a relationship between the leader and follower (Yukl, 1999) in accomplishing a common goal. Relationships are driven by group interests and not individual or self-interests (Conger, 1999). In other words, the leader and follower build a relationship to the level that they want to work with each other. Further, the transformational leadership theory suggests the need of leaders to take into account follower perspectives (Conger) as a way to measure effective leadership behaviors. However, athletic training education research on transformational leadership (Laurent and Bradney, 2007) focuses on leader perspectives and not follower perspectives. Further research regarding how athletic training students perceive effective leaders is essential in determining athletic training educator effectiveness.

Arguments supporting the need for athletic training educators and athletic training student relationships (Platt, 2000; Meyer, 2002) are evident in literature. At the most basic level, athletic training educators need athletic training students in order for a leader/follower(s) relationship to occur. Without this relationship, leaders would have no one to lead. This argument is further supported by literature (Meyer,

2002) suggesting that athletic training educators are situational leaders and that a relationship between the athletic training educator and athletic training student depends on the context of the situation.

Situational Leadership

Situational leadership theory (Platt, 2000; Meyer, 2002) has more practical applications than transformational leadership. The model applied in athletic training leadership literature regarding situational leadership is adapted from Hersey's, Blanchard's, and Johnson's (cited in Meyer) model of situational leadership. The adapted model labels athletic training students by placing them into one of four categories (telling, selling, participating, and delegating) based on their level of readiness. Further, it requires that athletic training educators apply the appropriate action pertaining to the category. Although it provides characteristics of how to gauge a student's level of readiness, situational leadership theory is ambiguous (Graeff, 1983; Vecchio, 1987) in that it does not provide a way for athletic training educators or athletic training students to operationalize these levels of readiness. For example, an athletic training student who is perceived as having a level of readiness labeled "low" is defined in the model as one who feels insecure in ability. The model does not identify who is making the determination of insecurity (athletic

training educator or athletic training student) nor does it provide characteristics for determining how the level of insecurity is operationalized.

Another concern of the adapted model (Meyer, 2002) is that it assumes that athletic training students will fit into one of these categories, which implies there is no spectrum between levels of readiness and action taken by athletic training educators. For example, according to the adapted model, an athletic training student who is labeled as having a low level of readiness requires detailed instruction from athletic training educators with no decision making opportunity granted to the athletic training student. This raises concern for an athletic training student who, although may feel insecure with his or her ability, may perceive the detailed instruction from the athletic training educator as autocratic and controlling in nature. Further, not allowing the athletic training student to give any input regarding decisions can limit educational dialog between the athletic training student and athletic training educators. Patient care is most important and this example is not intended to make light of that point; however, decision making input is only input and can be of value for an athletic training student who feels insecure. This dialog can help stimulate the athletic training student's thought process and build confidence, leading them out of their insecure state

rather than delaying their progress. Therefore, situational leadership theory is not applicable to all followers or in every situation (Blanchard, Zigarmi, and Nelson, 1993; Fernandez and Vecchio, 1997; Vecchio and Boatwright 2002; Graeff, 1983; Vecchio, 1987).

Literature (Blanchard, Zigarmi, and Nelson, 1993; Fernandez and Vecchio, 1997; Vecchio and Boatwright, 2002; Graeff, 1983; Vecchio, 1987) does not support the reliability and validity of the situational leadership theory for several reasons. Instruments administered (Blanchard, Zigarmi, and Nelson; Graeff; Vecchio; Vecchio and Boatwright) to determine the effectiveness of the leader reflect leader responses to effectiveness and do not take into account the perceptions of the followers as to what degree the leader's behavior is effective. Fernandez and Vecchio suggest that instruments used to measure follower perceptions relating to leader effectiveness do not support the situational leadership theory because of the instruments' inability to be generalized to followers with higher knowledge base. In Meyer's (2002) adapted model, this higher knowledge base of an athletic training student is considered a "high" level of readiness. Yet another concern of the situational leadership theory measurement instruments is the diversity of the tools used to measure effectiveness. Several tools have been used, such as the Leader Effectiveness and

Adaptability Description (Graeff), variations of the Leader Behavior Description Questionnaire (Vecchio; Vecchio and Boatwright), variations of the Leader Behavior Analysis (Blanchard, Zigarmi, and Nelson), and open-ended survey's (Fernandez and Vecchio), which suggests that scholars cannot agree on one universal tool for measuring situational leadership theory. Meyer's adapted model of situational leadership uses yet another tool.

Meyer's (2002) underlying argument that situational leadership behaviors are needed in athletic training education does have applicable components that should not be overlooked. Athletic training educators must be willing to be adaptive, flexible, and implement behaviors that match the need of the situation. However, operationalizing these behaviors is not as easy and simplistic as suggested in current athletic training education leadership literature.

A common theme evident in ATE leadership is the need for a relationship between the athletic training educator and the athletic training students (Laurent and Bradney, 2007; Meyer, 2002). Laurent and Bradney suggest that this relationship focus on the ability of the athletic training educator to transform athletic training students' values and beliefs. However, it is not clear to what these values and beliefs are to be transformed. Meyer (2002) suggests that relationships between

athletic training educators and athletic training students are critical because it guides athletic training educators in determining the behavior needed to lead the athletic training students.

Analysis of measurement tools

The following is an analysis of the measurement tools used in this proposal to measure leadership styles of athletic training educators.

Multifactor Leadership Questionnaire and Transformational Leadership

First, the Multifactor Leadership Questionnaire (MLQ) (Form 5X) assesses nine leadership factors posed by Bass and Avolio (Antonakis, Avolio, and Sivasubramaniam, 2003). Five of these factors are assessments of transformational leadership. The five factors of transformational leadership are 1.) idealized influence (attributed), which assesses the leader's social charismatic traits, 2.) idealized influence (behavior), which assesses the leader's charismatic actions based on his or her beliefs, values, and mission, 3.) inspirational motivation, which assesses the leader's ability to motivate followers' through optimism, focusing on ambitious goals, projecting an idealized vision, and encouraging followers that the vision (or goal) is achievable, 4.) intellectual stimulation, which is assessed through the followers' perceptions that the leader's

actions are logically appealing, the leader challenges the followers to think creatively and find solutions to problems, and 5.) individualized consideration, which is assessed through the leader's effectiveness of advising, supporting, and giving attention to the followers' needs. These are the five factors that will be measured in the current research. Table one indicates the items from the original MLQ (Form 5X) and their fit with each of the factors (Avolio and Bass, 2004).

Table 1

Items associated with each of the five factors measuring transformational leadership. Items are modified to represent the need for this research.

Factor: Idealized influence (attributes)

1. Instilled pride in me for being associated with them *(10)*
2. Went beyond self-interest for the good of the group *(18)*
3. Acted in ways that built my respect *(21)*
4. Displayed a sense of power and confidence *(25)*

Factor: Idealized influence (behaviors)

1. Talked about their most important values and beliefs *(6)*
2. Specified the importance of having a strong sense of purpose *(14)*
3. Considered the moral and ethical consequences of decisions *(23)*
4. Emphasized the importance of having a collective sense of mission *(34)*

Factor: Inspirational motivation

1. Talked optimistically about the future *(9)*
2. Talked enthusiastically about what needed to be accomplished *(13)*
3. Articulated a compelling vision of the future *(26)*
4. Expressed confidence that goals would be achieved *(36)*

Factor: Intellectual Stimulation

1. Re-examined critical assumptions to questions whether they are appropriate *(2)*
2. Sought differing perspectives when solving problems *(8)*
3. Got me to look at problems from many different angles *(30)*
4. Suggested new ways of looking at how to complete assignments *(32)*

Factor: Individual Consideration

1. Spent time teaching and coaching *(15)*
2. Treated me as an individual rather than just as a member of a group *(19)*
3. Considered me as having different needs, abilities, and aspirations from others *(29)*
4. Helped me to develop my strengths *(31)*

Note: The numbers in parenthesis indicate the original item from the Multifactor Leadership Questionnaire (Form 5X).

Antonakis, Avolio, and Sivasubramaniam (2003) conducted a quantitative study to test the reliability and factor structuring of, among others, transformational leadership using the MLQ (Form 5X). This form is a modification of the original MLQ, which as been amended through empirical testing and scholarly support (Antonakis, Avolio, and Sivasubramanium). The MLQ (Form 5x) is the ninth model of the MLQ and is considered the best model (lowest Akaike information criteria of all MLQ models) in regards to fit.

Antonakis, Avolio, and Sivasubramaniam (2003), conducted two studies focusing on 1.) the reliability of the MLQ (Form 5X), 2.) the interfactor structure among a different sample (male versus female), and 3.) the interfactor structure among different context in which the data were collected. Their hypothesis is that the interfactor structure and measurement model of the MLQ (Form 5X) would be invariant among different samples and different context in which the data were collected.

Results support a satisfactory model fit ($p < .001$)in study one and study two (Antonakis, Avolio, and Sivasubramaniam 2003) as measured by the Root Mean Square Error of Approximation (RMSEA) of.05 and .036 respectively. RMSEA was used to test significance due to large sample sizing and insensitivity of a chi-square statistical test due to large sample size. As well, Comparative Fit Index of study one (.905) and study two (.901)

further support significance of the MLQ (Form 5X). The authors utilized the above confirmatory factor analysis as a more thorough means to test reliability and validity as well as to have the ability to take into consideration contextual situations (Antonakis, Avolio, and Sivasubramaniam).

Leadership Behavior Description Questionnaire XII and Situational Leadership

The Leadership Behavior Description Questionnaire revised form XII (LBDQ-XII) is a survey used to quantitatively measure leaders' behavior based on the needs of the constituents (Vecchio and Boatwright, 2002). According to situational leadership, leaders' behavior is based on the maturity level of the constituent. The behavior is factored as considerate or structured (Schriesheim and Stogdill, 1975). The LBDQ-XII, according to Schriesheim and Stogdill, is a preferred tool for measuring considerate and structured behavior over the original LBDQ because of its factor simplicity, it does not contain pressure oriented questions (questions that focus on organizational production or outcomes), and because it contains only half of the items. Further, this tool is specific to measuring leader consideration behavior and structure behavior based on the needs of constituents, which are associated with situational leadership (Vecchio and Boatwright). Table two

indicates the items from the original LBDQ-XII and their fit with each of the factors (Stogdill, 1963).

Table 2

Items associated with the two factors measuring situational leadership. Items are modified to represent the need for this research.

Factor: Considerate

1. Was friendly and approachable (7)
2. Did little things to make it pleasant to be a member of the group (17)
3. Put suggestions made by the group into operation (27)
4. Treated all group members as their equals (37)
5. Gave advance notice of changes (47)
6. Kept to themselves (57)
7. Looked out for the personal welfare of group members (67)
8. Was willing to make changes (77)
9. Refused to explain their actions (87)
10. Acted without consulting the group (97)

Factor: Structure

1. Let group members know what was expected of them (4)
2. Encouraged the use of uniform procedures (14)
3. Tried out their ideas in the group (24)
4. Made their attitudes clear to the group (34)
5. Decided what should be done and how it should be done (44)
6. Assigned group members to particular tasks (54)
7. Made sure that their part in the group was understood by the group members (64)
8. Scheduled the work to be done (74)
9. Maintained definite standards of performance (84)
10. Asked that group members follow standard rules and regulations (94)

Note: The numbers in parenthesis indicate the original item from the LBDQ-XII.

The factor loadings for the first factor (*Consideration*) and second factor (*Structure*) were determined through a varimax (orthogonal) rotation (Schriesheim and Stogdill, 1975). Varimax rotation is appropriate because it simplifies the loading strength that each variable has on each factor (Hamilton, 1992). The criterion level was set at .25 (factor loading score) and with minimum eigenvalues at .30; only those items with a loading above .25 and eigenvalue above .30 were considered acceptable (Schriesheim and Stogdill). Acceptable *Consideration* and *Structure*loadings can be found in Appendix C.

Schriesheim and Stogdill (1975) report Kuder-Richardson reliabilities for the LBDQ-XII as .898 for *Consideration* and .782 for *Structure*; this is an acceptable reliability measure because of the dichotomous factors (Cortina, 1993) (*Consideration* and *Structure*).

Summary

Defining leadership is ambiguous and operationalizing it depends on the situation. The ability to influence athletic training students to achieve a common goal (Kutz, 2008; Laurent and Bradney, 2007; Meyer, 2002) has assumptions that clinical educators should consider prior to selecting a leadership behavior. This definition does not operationalize the "ability" or how a leader gains the ability to influence followers. Literature regarding how individuals develop into leaders (Kutz)

is contradictory. Notions that leadership characteristics are innate and learned (Kutz; Meyer, 2000) suggest that some individuals will never be leaders if they do not posses acquired personality characteristics. However, Kutz contradicts his notion by suggesting that leadership can be taught in athletic training education and should be a part of ATEP curriculum. Further clarification, if possible, is warranted regarding the practicality of teaching leadership in curriculum.

Conflicting and ambiguous literature regarding the definition of leadership in ATE can be misleading and limiting for athletic training students' progress. Arguments made that athletic training educators are either transformational leaders (Laurent and Bradney, 2007) or situational leaders (based on the situational model) (Meyer, 2002) continues to support the argument that there is not one best leadership style applicable to ATE. An athletic training educator that employs only one leadership theory should use caution as to not label and restrict athletic training students to one category or leadership style. Labeling athletic training students is not operationalized in either model (Laurent and Bradney; Meyer), which can lead to mislabeling and categorizing athletic training students into improper categories. Further, it can cause an athletic training educator to lead in a way that limits athletic training students abilities through boundaries and confines of

the theory being used. A leader who behaves based on the confines of one theory further limits his or her ability to lead effectively. Following theoretical behaviors precisely does not allow the athletic training educator to lead beyond the limits and confines of what the theory prescribes, thus limiting his or her effectiveness should the situation require behavior not prescribed by the theory.

CHAPTER 3

METHODOLOGY

Chapter overview

This chapter will provide detailed information regarding the methodology for this research proposal. Included in this section is the purpose of the research, research question, and the rationale for a quantitative approach for measuring educators' leadership styles and the relationship that these styles have on competency of athletic training students. Additionally, this chapter describes and justifies the proposal design, data sources, sampling strategy, data collection, and recording procedures.

Purpose statement

The purpose of this research is to determine if there is a relationship between leadership styles that athletic training students are exposed to in athletic training education programs and athletic training students' competence as measured by the first time pass rates on the Board of Certification exam (BOC). This research focuses on assessing leadership exposure of the ATEP as a whole (as opposed to assessing an individual leader in the ATEP), which reflects the aggregate leadership profile of the ATEP. Literature (Laurent and Bradney, 2007; Meyer, 2002) suggests two styles of leadership (transformational leadership and situational leadership) can be effective in motivating

athletic training students to improve competence in order to practice as an athletic trainer. Competence in athletic training is measured by the BOC exam; first time pass rates for athletic training education programs is a measure of program success. The CAATE's annual report includes the results of the BOC exam from a national perspective, which is based on students' first attempt on the BOC exam.

Determining the degree to which athletic training students are exposed to leadership styles and how these styles relate to competence as measured by the BOC exam can offer insight for athletic training educators in regard to effective leadership behaviors that can impact student competence as well as program success.

Research question

Do athletic training students who are exposed to transformational and situational leadership behaviors from educators in their ATEP relate to student competence as measured by the BOC exam?

Strategy of inquiry

The selected strategy of inquiry is the use of quantitative methodology. Through the use of a survey, athletic trainers who have graduated from an undergraduate athletic training education program will be randomly sampled to rate how exposure to transformational leadership and situational leadership styles

impacted them while enrolled at their respective athletic training education program. Quantitative methodology will include the distribution of the survey that asks questions specific to the tenants of leadership styles (transformational and situational) (independent variable) and attempts needed to pass the BOC exam (dependent variable). The survey will provide data that will be collected, statistically analyzed, reported, and validated.

Rationale for quantitative methodology

This proposal is based on quantitative analysis of leadership styles because of existing literature (Kutz, 2008; Laurent and Bradney, 2007; Meyer, 2002) and quantitative research (Bolkan and Goodboy, 2009; Pounder, 2008; Robinson, Lloyd, and Rowe, 2008) suggesting that leadership can positively impact student success.

Although related literature and research does not allude to specific research paradigms or worldviews, this research can be best explained through the lens of the post-positivist paradigm. The interest of this study rests on the assumptions of patterned cause and effect relationships between leadership styles and student competence; in other words, a leadership style(s) (cause) is an effect of competence of athletic training education students as measured by the BOC. However, this worldview assumes that there is no absolute truth and that the

cause (leadership style) does not always affect the dependent variable (in this case, competency of athletic training students) in the same way every time the phenomenon is tested. Therefore, results of this research can help explain how leadership styles in athletic training education programs and athletic training students' competence compares to research conducted in other education programs. The results can further explain the reliability and validity of the measurement tools when tested under different circumstances.

Rationale for study

As the researcher of this proposal, my standpoint is that leadership styles can positively affect athletic training students' competence. I am the current program director of an undergraduate athletic training education program and am interested in improving my leadership effectiveness as well as other faculty members' leadership effectiveness in our athletic training education program (ATEP). Further, as an educator, determining how leadership styles impact student competence can help benefit athletic training students' growth and development as effective healthcare providers.

The results of this research will provide empirical evidence that can bridge the gap between prescriptive literature in athletic training and empirical evidence that is absent in athletic training literature. Further, this research can provide

leaders in the field of athletic training education with information pertaining to effective styles that can improve student competence as measured by the BOC exam as well as improve program effectiveness through higher first time pass rates of the BOC exam.

Research design

This is a quantitative research design that measures leadership styles (independent variable) and their relationship to student competence (dependent variable). Specifically, transformational and situational leadership theories will be analyzed to determine if a relationship exists between an athletic training students' exposure to tenants of these theories and athletic training students' competence. Passing of the BOC exam is the indicator used to operationalize competence. A copy of the survey can be found in Appendix C.

Operational definitions

Transformational leadership is a behavior that a leader engages in (consciously or subconsciously) by clearly sharing the vision, beliefs, and values of the organization (Lowe, Kroeck, Sivasubramaniam, 1996). Further, the leader takes into account the needs of the followers in an effort to motivate followers to work towards the vision, beliefs, and values established. In doing so, it is argued that leaders have the ability to help followers exceed their expectations (Conger,

1999; Lowe, Kroeck, Sivasubramaniam; Yukl, 1999); for example, motivating students to exceed their own expectations or achieve more than what was expected of them (Pounder, 2008) through promoting student success and not settling for mediocrity.

Situational leadership is a constituent-centered leadership behavior that takes into account the needs of the constituent. The behavior is determined through the leader's ability to recognize the constituent's maturity and knowledge level and then provide the appropriate feedback to promote positive outcomes (Graeff, 1983; Vecchio, 1987). Appropriate feedback is based on directive or supportive behavior (Blanchard, Zigarmi, and Nelson, 1993). Leaders have the responsibility to provide directive behavior if the constituent is less mature and has minimal knowledge for the given situation. Directive behavior could be detailed instructions from the leader or step-by-step instructions from the leader to help the constituent through a process. In contrast, the leader provides supportive behavior if the maturity level and knowledge base of the constituent is high enough to handle the situation with autonomy. Supportive behavior is considered laissez-faire, encouraging, hands-off, and observing the constituent. The leader intervenes when the constituent asks or the leader deems necessary.

In the classroom or clinical setting, descriptive behavior could mean that educators provide feedback (and or intervene)

immediately to a student who is not as knowledgeable with a task and seems to be struggling with a process. Supportive behavior in the classroom or clinical setting would call for educators to allow a student to work through a process if the student's knowledge base is considered high enough (has been taught and or previously exposed to the situation). Educators would allow the student the autonomy of making a clinical decision or diagnosis without intervening or providing immediate feedback unless the student asks or patient care is jeopardized.

Control variables

The following is a list of control variables and are based on other factors that may contribute to faculty members' ability to be effective leaders and/or athletic training students' competence level as measured by passing of the BOC exam.

- Faculty members' degree; for example, bachelor, masters, or terminal degree
- Faculty members' years of experience teaching
- Faculty age
- Sex of the athletic training students
- Sex of the educators
- Average GPA/QPA of students
- Class size
- Students who participate in a preparation or mock BOC program outside of coursework and internal study sessions. Preparation programs exist that allow students to participate in mock BOC exams, identify areas of weakness relative to athletic training competency, and provide feedback to the students regarding test taking strategies.
- Faculty to student ratio
- Tenure track appointment of faculty

- Overall perception of faculty members teaching in the athletic training education program; for example, poor, fair, good, excellent

Hypothesis

Research Hypothesis

1. Athletic training students who are exposed to transformational leadership behavior from educators in their ATEP are more likely to pass the BOC exam on their first attempt. This hypothesis is rooted in literature (Conger, 1999; Lowe, Kroeck, Sivasubramaniam; Pounder, 2008; Yukl, 1999), which suggests that transforming students' work ethic to improve extra effort can lead to positive student outcomes. In this research, student outcomes is reflective of competence as measured by the BOC exam: specifically, whether they pass the exam the first time. This hypothesis is also based on quantitative research that supports transformational leadership as a factor in student outcomes (Bolkan and Goodboy, 2009; Pounder, 2008)
2. Athletic training students who are exposed to situational leadership behavior from educators in their ATEP are more likely to pass the BOC exam on their first attempt. This hypothesis is grounded in literature that suggests the need to treat students according to maturity level and knowledge base (Meyer, 2002) as well as empirical research (Fernandez

and Vecchio, 1997; Hanson and Stenvig, 2008; Vecchio and Boatwright, 2002), which supports situational leadership as a means for positive outcomes.

3. Athletic training students who are exposed to more than one leadership style (transformational and situational) from educators in their ATEP are more likely to pass the BOC exam on their first attempt. Given the justification that each of the leadership styles has potential of helping students gain competence, a logical conclusion is that exposure to a combination of these leadership styles would also improve competence as measured by the BOC exam.

Null Hypothesis

Athletic training students who are exposed to transformational and situational leadership styles have no relationship to athletic training students competence as measured by the BOC exam.

Measurement details

Independent Variable One Measurement

The first independent variable, transformational leadership, will be measured using the Multifactor Leadership Questionnaire (MLQ) (Avolio and Bass, 2004). This leadership tool is supported in literature as an effective, valid, and reliable way to measure charismatic attributes (Lowe, Kroeck, Sivasubramaniam, 1996), which are considered strong

characteristics of transformational leadership. For this research, the MLQ will be formatted to assess athletic training students' perspectives of their educators' ability to lead effectively in a transformational manner. The format is changed from the original leader self assessment format of the MLQ to reflect the needs of this research.

Independent Variable Two Measurement

The second independent variable, situational leadership, will be measured using the Leader Behavior Descriptive Questionnaire Form XII (LBDQ-XII). Situational leadership effectiveness is determined through the leader's ability to recognize the constituent's maturity and knowledge level and then provide the appropriate feedback to promote positive outcomes (Graeff, 1983; Vecchio, 1987). Appropriate feedback is based on directive or supportive behavior (Blanchard, Zigarmi, and Nelson, 1993). This tool is modified from its original format as a leader self assessment tool (Stogdill, 1963) to students' perspective assessment tool of their athletic training educators' effectiveness of situational leadership ability.

Measurement error can be diagnosed for controlling for the variables previously listed. For example, results of a survey may indicate that a student passed the BOC exam on the first attempt, perceived transformational leadership as a contributing factor to passing the exam, and indicated he or she had a high

GPA/QPA. By controlling for GPA/QPA, measurement error can be detected and attributed to the individual's ability to retain information and recall the information when taking the BOC. Therefore, it can be suspected that individuals with higher GPA/QPA are more motivated to study and prepare for the BOC exam and have a more favorable (overall) perception of the ATEP faculty in terms of leadership.

Dependent Variable Measurement

The dependent variable is athletic training students' level of competence, which is measured by the BOC exam. The BOC and its Role Delineation Study (2010), is the means by which individuals are identified as being competent to practice as a certified athletic trainer (ATC). The BOC exam is comprised of two parts. The first part assesses didactic (classroom based knowledge) competency and the second part assesses clinical (skill) competency. The written section focuses on didactic competency, which tests how well the athletic training student knows the material. The written simulation section of the BOC assess how well the athletic training student can apply skills such as palpating anatomical reference points and diagnosing an injury.

Data source

This is an original research study that will be conducted utilizing sampling of certified athletic trainers in District 2 of the National Athletic Trainers Association who have passed the BOC exam or have taken the BOC exam at least once without passing. District 2 is a region of the NATA whose membership is comprised of residents living in Pennsylvania, New York, Delaware, and New Jersey. Members of the National Athletic Trainers' Association (NATA) who live in this geographic location are automatically enrolled as members of District 2. Sampling will be conducted through the NATA Research Survey Service; the service provides email contact information for researchers at $.09 per name. This research will sample all members of District 2. The leadership questionnaire (appendix C) will be sent electronically to the NATA District 2membership. The email will contain a link to Survey Monkey, which will contain the leadership questionnaire. Participating subjects can complete and submit the survey online. Results will remain on Survey Monkey and then transferred to an Excel spreadsheet for analysis.

A limitation to this sampling strategy is that not all certified athletic trainers are members of the NATA and, therefore are not in the District 2 membership directory. Thus, results will represent certified athletic trainers who are

members of the NATA and reside in District two; it cannot be assumed that results reflect the entire population of certified athletic trainers.

Data analysis

Data will be collected via Survey Monkey. Once the data is collected, results will be recorded in an Excel spreadsheet and transferred into SPSS for analysis. Depending on the distribution of survey observations, ordinary least squares and/or a generalized regression analysis will be run on the data. This statistical methodology is chosen because of the complexity of control variables as well as the complexity of the model attempting to predict competency based on leadership exposure. The main assumption related to this model is the measure of competence (dependent variable) of athletic training students. Competence is measured by the BOC exam; the assumption is that the BOC is a valid and reliable means to assess competency level of athletic training students.

The leadership questionnaire (Appendix C) will be validated for the population sampled in this research. Since this research is utilizing two measurement scales that have not been empirically tested in athletic training education, the need exists to assess its validity and reliability specific to ATEPs and athletic trainers' perceptions of their respective ATEPs.

Ethical considerations

This research will follow Indiana University of Pennsylvania's Institution Review Board's policy and procedures to ensure protection of human subjects.

To ensure subject privacy, names will be replaced with random numbers. Since the sample will be generated from the NATA District 2 Membership Directory, autonomy is of concern; however, when the surveys are returned, they will not be associated in anyway with the subjects' name. Therefore, responses cannot be matched to the subject completing the survey.

Participants of the survey will be informed of their rights to voluntary participation and their right to withdraw from or refuse to participate in the research with no consequences. Further, the participants will be informed that by completing the survey, they have read and understand their rights.

Although this is a survey and poses minimal risk, participants will be instructed that they may experience psychological stress. This could occur if participants have not passed the BOC on the first attempt, which can lead to the participant feeling inadequate or inferior to other practicing professionals.

The informed consent will provide the participant with the purpose of the study, how results will be used, as well as the researchers vested interest.

CHAPTER 4

RESULTS

Introduction

The purpose of this research is to identify the types or styles of leadership (independent variable) that athletic training students are exposed to while enrolled in their undergraduate athletic training education program (ATEP) and if there is a relationship between these leadership styles and competence of athletic training students (dependent variable) as measured by the Board of Certification (BOC) exam. Specifically, transformation leadership and situational leadership were regressed on first-time pass rate of the BOC exam.

This chapter presents the demographic information of the sample and the results of the online questionnaire. This chapter will also discus the results of the research question and each hypothesis. Finally, a summary of key findings will conclude this chapter.

Research question

Do athletic training students who are exposed to transformational and situational leadership behaviors from educators in their ATEP relate to student competence as measured by the BOC exam?

Research hypothesis

1. Athletic training students who are exposed to transformational leadership behavior from educators in their ATEP are more likely to pass the BOC exam on their first attempt.
2. Athletic training students who are exposed to situational leadership behavior from educators in their ATEP are more likely to pass the BOC exam on their first attempt.
3. Athletic training students who are exposed to more than one leadership style from educators in their ATEP are more likely to pass the BOC exam on their first attempt.

Demographics

This original research study utilized sampling of certified athletic trainers in District 2 of the National Athletic Trainers Association who have passed the BOC exam in the last six years or have taken the BOC exam at least once in the last six years without passing. District 2 is a region of the NATA whose membership is comprised of residents living in Pennsylvania, New York, Delaware, and New Jersey. Members of the National Athletic Trainers' Association (NATA) who live in this geographic location are automatically enrolled as members of District 2.

The leadership questionnaire (appendix C) was sent electronically to the NATA District 2 membership. Subjects were contacted via email and provided a link to Survey Monkey, which contained the leadership questionnaire. Participating subjects completed and submitted the survey online.

Sampling was conducted through the NATA Research Survey Service. The sample consisted of all members of District 2 (n= 2798); 322 subjects started the survey and 284 (88.2%) total responses were completed and returned. The total response rate was 8.69% (see Table 3).

Table 3

Response rate.

	N	Percent
District 2 membership	2798	
Total Responses	322	8.69

Only those respondents who graduated from an ATEP and took the BOC exam in the past six years (pass or fail) were kept in the sample. This sub-sample consisted of 101 (n=101) respondents who completed the leadership measurement scale. Subjects were asked to complete 15 demographic questions.

Thirty-one subjects were male (n=31) and 70 subjects were female (n=70)(see Table 4).

Table 4

Sex of subjects.

	Frequency	Percent	Valid Percent	Cumulative Percent
1 male	31	30.7	30.7	30.7
2 female	70	69.3	69.3	100.0
Total	101	100.0	100.0	

Table 5 shows that the mean age of subjects was 25.14 with a standard deviation of 2.070

Table 5

Mean age of subjects.

Mean	N	Std. Deviation
25.14	101	2.070

Ninety-six subjects reported that they were white and five subjects indicated their race to be something other than white (Table 6).

Table 6

Race of subjects.

	Frequency	Percent	Valid Percent	Cumulative Percent
1 white	96	95.0	95.0	95.0
2 other	5	5.0	5.0	100.0
Total	101	100.0	100.0	

Subjects were asked to indicate the number of years they have been certified. Table 7 illustrates that 68 subjects have been certified from less than one year to three years. Thirty-three subjects have been certified for four to six years.

Table 7

Years certified.

	Frequency	Percent	Valid Percent	Cumulative Percent
1 0-3 years	68	67.3	67.3	67.3
2 4-6 years	33	32.7	32.7	100.0
Total	101	100.0	100.0	

Fifty-four percent of the subjects earned their bachelor degree in athletic training from an accredited ATEP in the Commonwealth of Pennsylvania. Forty-seven percent earned their bachelor degree in athletic training from an accredited ATEP in a state other than the Commonwealth of Pennsylvania (see Table 8).

Table 8

State from which subject earned his or her degree.

	Frequency	Percent	Valid Percent	Cumulative Percent
1 PA	54	53.5	53.5	53.5
2 Other	47	46.5	46.5	100.0
Total	101	100.0	100.0	

Subjects were asked to report their highest SAT score. Research suggests that the higher a student's SAT score, the more likely he or she is to pass his or her professional certification exam on the first attempt (Burke, 2005; Platt, Sammarone, and McGlumphy, 2001; Ukpabi, 2008). Table 9 provides the mean score of subjects SAT score as 1172.07 with a standard deviation of 332.37. Note that only 46 subjects answered this question.

There are several reasons that these variables may be missing. The first is due to censoring. The possibility exists that respondents with lower SAT scores were reluctant to answer. Another possible reason for the missing cases can be attributed to respondents' inability to recall their SAT scores while completing the survey. This possibility exists for the SAT question and not for other questions such as GPA because of how the question was structured. Respondents were asked to report their highest SAT score as opposed to being able to select from a predetermined answer that categorized score ranges.

The option to keep the variable SAT score in the data set was decided based on previous research suggesting that SAT scores impact first time pass rates of certifying professional exams (Burke, 2005; Platt, Sammarone, and McGlumphy, 2001; Ukpabi, 2008). While censuring may have occurred, there is no reason to believe that it is biasing the results; that is,

censoring most likely occurred at random based on the respondents' ability to recall their SAT score.

Table 9

Mean SAT score.

Mean	N	Std. Deviation
1172.07	46	332.370

Note: 55 subjects did not answer this question

Thirteen subjects reported their GPA equal to or below 3.0 at the time of graduation and 88 subjects reported their GPA above 3.0 at the time of graduation (see Table 10).

Table 10

GPA of subjects reported at graduation.

	Frequency	Percent	Valid Percent	Cumulative Percent
1 ≤ 3.0	13	12.9	12.9	12.9
2> 3.0	88	87.1	87.1	100.0
Total	101	100.0	100.0	

Table 11 provides descriptive statistics indicating the number of students that each subject graduated with in their ATEP. This predictor was asked to determine the effect of class size on competence. Smaller class size may allow students to have more one-on-one instruction or more access to faculty members; therefore, increasing student success in the classroom and increasing first-time pass rate on the BOC exam. In contrast, larger class size may benefit students in regard to first-time pass rate because students have more opportunity for peer interaction; thus increasing the opportunity to learn and

pass the BOC exam on the first attempt. Thirty-two subjects graduated with 10 or fewer students and 66 subjects graduated with more than 30 students. Note that three subjects did not answer this question.

Table 11

Number of students each subject graduated with.

	Frequency	Percent	Valid Percent	Cumulative Percent
1 1-10	32	31.7	32.7	32.7
2 > 10	66	65.3	67.3	100.0
Total	98	97.0	100.0	
Missing System	3	3.0		
Total	101	100.0		

Note: three subjects did not answer this question

The dependent variable is pass rate of the BOC exam. Fifty-five subjects stated they passed the BOC on their first attempt and 46 stated they did not pass the BOC exam on their first attempt (see Table 12).

Table 12

Pass rate of the BOC exam.

	Frequency	Percent	Valid Percent	Cumulative Percent
1 first attempt	55	54.5	54.5	54.5
2 did not pass first attempt	46	45.5	45.5	100.0
Total	101	100.0	100.0	

Subjects were then asked to indicate the highest degree obtained by the majority of faculty members in their ATEP. Table 13 illustrates that fifty-two subjects reported that the

majority of their faculty had a terminal degree (doctorate of philosophy or doctorate of education) and 49 did not have their terminal degree.

Table 13

Highest degree obtained by ATEP faculty.

	Frequency	Percent	Valid Percent	Cumulative Percent
1 terminal degree	52	51.5	51.5	51.5
2 non-terminal degree	49	48.5	48.5	100.0
Total	101	100.0	100.0	

The average number of years taught by the faculty in each subjects ATEP is reported in Table 14. Forty-one subjects indicated that faculty taught an average of 10 years or less. Fifty-nine subjects stated that faculty taught an average of 11-30 years. Note that one subject did not answer the question.

Potential problems exist with this measure. First, length of time spent teaching does not account for the degree a faculty member has earned. For example, a faculty member with an education degree who has been teaching for two years may have more diverse teaching strategies or approaches than a faculty member without an education degree who has been teaching for 15 years; thus, the faculty member with the education degree may be perceived as a better teacher and leader in the classroom. Another potential problem with this measure is related to experience. It makes logical sense that the more experience an

educator has in the classroom, the more likely he or she is to have polished skills needed to help students become competent. This argument contradicts the first regarding the degree of a faculty member; therefore, this measure is not reliable and should be interpreted with caution and with consideration of other variables.

Table 14

Average number of years taught by faculty in ATEP.

		Frequency	Percent	Valid Percent	Cumulative Percent
	1 1-10 years	41	40.6	41.0	41.0
	2 11-30 years	59	58.4	59.0	100.0
	Total	100	99.0	100.0	
Missing	System	1	1.0		
Total		101	100.0		

Note: one subject did not answer this question

Subjects were asked to indicate the tenure status of the majority of faculty members who taught them in their ATEP. Table 15 depicts forty-four subjects reported that the faculty in their ATEP were tenured, while fifty-six stated their faculty were not tenured. Note that 1 subject did not complete this question.

Table 15

Tenure status of teaching faculty.

		Frequency	Percent	Valid Percent	Cumulative Percent
	1 tenured	44	43.6	44.0	44.0
	2 not tenured	56	55.4	56.0	100.0
	Total	100	99.0	100.0	
Missing	System	1	1.0		
Total		101	100.0		

Note: one subject did not answer this question

Table 16 provides the average number of males and females who taught in the subjects' ATEP. On average, 3.63 male faculty members taught in the subjects' ATEP and 3.3 female faculty members taught in the subjects' ATEP with a standard deviation of 1.9 for males and 1.885 for females.

Table 16

Number of male and female faculty in each subjects' ATEP.

	Male	Female
Mean	3.62	3.30
N	90	89
Std. Deviation	1.900	1.885

Subjects were then asked to indicate their institution's National Collegiate Athletic Association (NCAA) affiliation in terms of division. Twenty-nine subjects graduated from a division I institution and 67 students graduated from an institution who's division was something other than division I.

Note there are five subjects who did not complete this question (see table 17).

Table 17

NCAA affiliation.

		Frequency	Percent	Valid Percent	Cumulative Percent
	1 Div I	29	28.7	30.2	30.2
	2 Not Div I	67	66.3	69.8	100.0
	Total	96	95.0	100.0	
Missing	System	5	5.0		
Total		101	100.0		

Subjects were asked if they ever took a course specific to preparing them for the BOC exam. Table 18 provides data that indicates 24 subjects did engage in a formal preparatory course and 72 subjects did not engage in a preparatory course. Note that five subjects did not answer this question.

Table 18

Subject engagement in a preparatory course.

		Frequency	Percent	Valid Percent	Cumulative Percent
	1prep program	24	23.8	25.0	25.0
	2 no prep program	72	71.3	75.0	100.0
	Total	96	95.0	100.0	
Missing	System	5	5.0		
Total		101	100.0		

Note: five subjects did not complete this question

Significance of leadership styles on first-time pass rate of the BOC exam

The following section provides information related to the independent variables being regressed on the dependent variable (first-time pass rate of the BOC exam). A logistic regression was the statistic used to determine the significance that leadership styles have on first-time pass rate of the BOC exam while controlling for other variables.

Table 19 is a statistical output for transformational leadership tenants (*attributes, behaviors, motivation, intellectual stimulation, and individual consideration*) running a logistic regression on first-time pass rate of the BOC exam. This is the best model fit with an R^2 of .677; significance level of $p \leq .05$. Of the leadership tenants analyzed, only *behaviors* was found to be significant (.043, $p<0.05$)(see Table 1 for a description of *behaviors*). Further, variables *SAT scores* (.045, $p<0.05$) and *age of the subject* (.028, $p<0.05$) were significant factors in predicting the likelihood of passing the BOC exam on the first attempt. As SAT score (see Table 9 for mean score) increases by one point, the likelihood of passing the BOC exam on the first attempt increases by .992 (B=.008). As age of subjects increases by one year, the likelihood of passing the BOC exam on the first attempt decreases by 2.448 (B=-.895). First-time pass is coded as one (1) and did not pass the first

time is coded as zero (0). Lastly, as exposure to *behavior* tenants (see Table 1 for description of *behaviors*) increases one unit on the Likert scale for transformational leadership, the likelihood of passing the BOC on the first attempt increases by .003 (B= 5.663). Again, pass-rate is coded as 1=passed the first attempt and 0=did not pass the first attempt.

Table 19

Logistic regression of transformational leadership on first-time pass rate of the BOC exam.

DV –first time pass rate	B	S.E.	Wald	df	Sig.	Exp(B)
ATTRIBUTES*	-.952	2.382	.160	1	.689	2.591
BEHAVIORS*	5.663	2.798	4.096	1	.043	.003
MOTIVATION*	-2.221	1.656	1.799	1	.180	9.219
INTELL STIM*	.841	1.462	.331	1	.565	.431
INDIVID CONSID*	-2.321	1.940	1.432	1	.231	10.186
SEX**	.156	1.140	.019	1	.891	.856
AGE**	-.895	.407	4.839	1	.028	2.448
SAT**	.008	.004	4.005	1	.045	.992
Faculty Fem**	-.316	.434	.531	1	.466	1.372
State of deg**	-.813	1.092	.554	1	.457	2.254
Subject GPA**	-3.391	2.520	1.811	1	.178	29.695
InstDiv**	-1.360	1.385	.965	1	.326	3.897
Constant	22.722	14.746	2.374	1	.123	.000

*Transformational leadership tenants
** Control variables
NOTE: Faculty Fem=average number of female faculty members; Faculty Male=average number of male faculty members; Race=race of subjects; State of degree=the state that subjects took the BOC exam; Subject GPA=subjects' highest GPA; Class size=number of students per graduating class; Faculty edu=highest level of degree; Facyrs teach=average number of years faculty taught; Fac ten stat=tenure status of most faculty members; Div=NCAA Division; Subjects SAT=subjects' highest SAT score; Age=age of subjects; Sex=sex of subject

The following section provides tables of each of the transformational leadership tenants regressed individually on

first-time pass rate of the BOC exam. A logistic regression was calculated predicting *individual consideration* (see Table 1 for description of individual consideration) on first-time pass rate (Table 20). The regression equation was not significant (.721, p>.05) with an R^2 of .620. All other control variables were not significant.

Table 20

Logistic regression of individual consideration on first-time pass rate of the BOC exam.

DV –first time pass rate	B	S.E.	Wald	df	Sig.	Exp(B)
INDIVID CONSID*	-.288	.790	.133	1	.715	1.334
Faculty Fem**	-.369	.384	.920	1	.337	1.446
Race**	24.474	23459.378	.000	1	.999	.000
State of deg**	-.379	.956	.157	1	.692	1.461
Subject GPA**	-.497	2.390	.043	1	.835	1.644
Class size**	.365	.987	.137	1	.711	.694
Faculty edu**	-.918	.987	.866	1	.352	2.505
Facyrs teach**	.337	1.120	.090	1	.764	.714
Fac tenure stat**	.367	1.235	.088	1	.766	.693
InstDiv**	-2.131	1.274	2.799	1	.094	8.425
Subject SAT**	.010	.006	2.978	1	.084	.990
Faculty Male**	.021	.287	.005	1	.943	.980
Constant	-28.744	23459.381	.000	1	.999	3.045E12

*Transformational leadership tenants
** Control variables
NOTE: Faculty Fem=average number of female faculty members; Faculty Male=average number of male faculty members; Race=race of subjects; State of degree=the state that subjects took the BOC exam; Subject GPA=subjects' highest GPA; Class size=number of students per graduating class; Faculty edu=highest level of degree; Facyrs teach=average number of years faculty taught; Fac ten stat=tenure status of most faculty members; Div=NCAA Division; Subjects SAT=subjects' highest SAT score; Age=age of subjects; Sex=sex of subject

Table 21 provides information for a logistic regression predicting *intellectual stimulation* (see Table 1 for a description of intellectual stimulation) on first-time pass rates of the BOC exam. The regression equation was not significant (.884, p>.05) with an R^2 of .555. *Intellectual stimulation* cannot be used to predict first-time pass rate on the BOC exam. All other control variables are not significant.

Table 21

Logistic regression of intellectual stimulation on first-time pass rate of the BOC exam.

DV – first time pass rate	*B*	*S.E.*	*Wald*	*df*	*Sig.*	*Exp(B)*
*Faculty Fem***	*-.374*	*.393*	*.901*	*1*	*.342*	*1.453*
*Race***	*24.544*	*23250.548*	*.000*	*1*	*.999*	*.000*
*State of deg***	*-.282*	*.917*	*.095*	*1*	*.758*	*1.326*
*Subject GPA***	*-.244*	*2.264*	*.012*	*1*	*.914*	*1.277*
*Class size***	*.494*	*.969*	*.260*	*1*	*.610*	*.610*
*Faculty edu***	*-.859*	*1.012*	*.720*	*1*	*.396*	*2.362*
*Facyrs teach***	*.127*	*.988*	*.017*	*1*	*.897*	*.880*
*Fac tenure stat***	*.278*	*1.214*	*.053*	*1*	*.819*	*.757*
*InstDiv***	*-2.023*	*1.214*	*2.777*	*1*	*.096*	*7.563*
*Subject SAT***	*.011*	*.006*	*3.096*	*1*	*.079*	*.989*
*Faculty Male***	*.057*	*.291*	*.038*	*1*	*.846*	*.945*
*INTELL STIM**	*.093*	*.639*	*.021*	*1*	*.884*	*.911*
Constant	*-31.141*	*23250.551*	*.000*	*1*	*.999*	*3.344E13*

**Transformational leadership tenants*
*** Control variables*
NOTE: Faculty Fem=average number of female faculty members; Faculty Male=average number of male faculty members; Race=race of subjects; State of degree=the state that subjects took the BOC exam; Subject GPA=subjects' highest GPA; Class size=number of students per graduating class; Faculty edu=highest level of degree; Facyrs teach=average number of years faculty taught; Fac ten stat=tenure status of most faculty members; Div=NCAA Division; Subjects SAT=subjects' highest SAT score; Age=age of subjects; Sex=sex of subject

A logistic regression was calculated predicting *motivation* (see Table 1 for a description of motivation) on first-time pass rates of the BOC exam (Table 22). The regression equation was not significant (.814, p>.05) with an R^2 of .555. Therefore, the tenant *motivation* cannot be used to predict first-time pass rates on the BOC exam. All other control variables are not significant.

Table 22

Logistic regression of motivation on first-time pass rate of the BOC exam.

DV –first time pass rate	B	S.E.	Wald	df	Sig.	Exp(B)
Faculty Fem**	-.388	.399	.948	1	.330	1.474
Race**	24.671	23172.796	.000	1	.999	.000
State of deg**	-.280	.918	.093	1	.761	1.323
Subject GPA**	-.453	2.483	.033	1	.855	1.572
Class size**	.401	.992	.164	1	.686	.670
Faculty edu**	-.907	.988	.842	1	.359	2.476
Facyrs teach**	.245	1.067	.053	1	.818	.783
Fac tenure stat**	.293	1.218	.058	1	.810	.746
InstDiv**	-2.115	1.289	2.691	1	.101	8.291
Subject SAT**	.011	.006	3.084	1	.079	.989
Faculty Male**	.013	.302	.002	1	.965	.987
MOTIVATION*	-.177	.749	.056	1	.814	1.193
Constant	-29.586	23172.799	.000	1	.999	7.065E12

*Transformational leadership tenants
** Control variables
NOTE: Faculty Fem=average number of female faculty members; Faculty Male=average number of male faculty members; Race=race of subjects; State of degree=the state that subjects took the BOC exam; Subject GPA=subjects' highest GPA; Class size=number of students per graduating class; Faculty edu=highest level of degree; Facyrs teach=average number of years faculty taught; Fac ten stat=tenure status of most faculty members; Div=NCAA Division; Subjects SAT=subjects' highest SAT score; Age=age of subjects; Sex=sex of subject

A logistic regression was calculated predicting *behaviors* (see Table 1 for a description of behaviors) on first-time pass rates of the BOC exam (see Table 23). The regression equation was not significant (.814, p>.05) with an R^2 of .566. *Behaviors* cannot be used to predict first-time pass rates of the BOC exam. All other control variables are not significant.

Table 23

Logistic regression of behaviors on first time pass rate of the BOC exam.

DV –first time pass rate	B	S.E.	Wald	df	Sig.	Exp(B)
Faculty Fem**	-.302	.411	.539	1	.463	1.352
Race**	24.259	23385.395	.000	1	.999	.000
State of deg**	-.281	.921	.093	1	.761	1.324
Subject GPA**	-.036	2.211	.000	1	.987	1.037
Class size**	.678	1.027	.437	1	.509	.507
Faculty edu**	-.706	1.018	.481	1	.488	2.026
Facyrs teach**	-.160	1.058	.023	1	.880	1.173
Fac tenure stat**	.465	1.212	.147	1	.701	.628
InstDiv**	-1.692	1.266	1.787	1	.181	5.431
Subject SAT**	.010	.006	3.079	1	.079	.990
Faculty Male**	.115	.296	.151	1	.698	.891
BEHAVIORS*	.692	.918	.569	1	.451	.501
Constant	-34.262	23385.398	.000	1	.999	7.584E14

*Transformational leadership tenants
** Control variables
NOTE: Faculty Fem=average number of female faculty members; Faculty Male=average number of male faculty members; Race=race of subjects; State of degree=the state that subjects took the BOC exam; Subject GPA=subjects' highest GPA; Class size=number of students per graduating class; Faculty edu=highest level of degree; Facyrs teach=average number of years faculty taught; Fac ten stat=tenure status of most faculty members; Div=NCAA Division; Subjects SAT=subjects' highest SAT score; Age=age of subjects; Sex=sex of subject

A logistic regression was calculated predicting *attributes* (see Table 1 for a description of attributes) on first-time pass

rates of the BOC exam (see Table 24). The regression equation was not significant (.560, p>.05) with an R^2 of .561. *Attributes* cannot be used to predict first-time pass rates of the BOC exam. All other control variables are not significant.

Table 24

Logistic regression of attributes on first-time pass rate of the BOC exam.

DV –first time pass rate	B	S.E.	Wald	df	Sig.	Exp(B)
Faculty Fem**	-.456	.412	1.226	1	.268	1.577
Race**	24.325	23385.906	.000	1	.999	.000
Subject GPA**	-.370	.927	.159	1	.690	1.448
Subject GPA**	-.506	2.358	.046	1	.830	1.659
Class size**	.220	1.031	.046	1	.831	.802
Faculty edu**	-.934	.989	.891	1	.345	2.544
Facyrs teach**	.431	1.095	.155	1	.694	.650
Fac tenure stat**	.350	1.235	.080	1	.777	.705
InstDiv**	-2.379	1.388	2.938	1	.087	10.798
Subject SAT**	.010	.006	2.674	1	.102	.990
Faculty Male**	-.005	.287	.000	1	.985	1.005
ATTRIBUTES*	-.647	1.110	.340	1	.560	1.910
Constant	-25.920	23385.910	.000	1	.999	1.806E11

*Transformational leadership tenants
** Control variables
NOTE: Faculty Fem=average number of female faculty members; Faculty Male=average number of male faculty members; Race=race of subjects; State of degree=the state that subjects took the BOC exam; Subject GPA=subjects' highest GPA; Class size=number of students per graduating class; Faculty edu=highest level of degree; Facyrs teach=average number of years faculty taught; Fac ten stat=tenure status of most faculty members; Div=NCAA Division; Subjects SAT=subjects' highest SAT score; Age=age of subjects; Sex=sex of subject

The following section provides tables for situational leadership tenants (*considerate* and *structure*) regressed on first-time pass rate of the BOC exam. See Table 2 for a description of the situational leadership tenants. A logistic

regression was calculated predicting both situational leadership tenants on first-time pass rates of the BOC exam. A significant regression equation was found for *SAT score* (.030, p<.05) with an R^2 of .525. *SAT score* can be used to predict first-time pass rate of the BOC exam. As the subjects' SAT score increases by one unit, the likelihood of first-time pass rate increases by .989 (B=.011). Pass-rate is coded as 1=passed the first attempt and 0=did not pass the first attempt.

Table 25

Logistic regression of situational leadership tenants on first-time pass rate of the BOC exam.

DV –first time pass rate	B	S.E.	Wald	df	Sig.	Exp(B)
STRUCTURE*	2.241	1.979	1.283	1	.257	.106
CONSIDERATE*	-1.963	1.690	1.348	1	.246	7.118
AGE**	-.589	.303	3.771	1	.052	1.803
Subject SAT**	.011	.005	4.683	1	.030	.989
Subject GPA**	-2.958	2.519	1.379	1	.240	19.268
Class size**	-.510	1.105	.213	1	.645	1.665
Faculty edu**	-1.602	1.176	1.855	1	.173	4.964
Faculty Fem**	-.244	.298	.668	1	.414	1.276
Faculty Male**	-.130	.300	.189	1	.664	1.139
Fac tenure stat**	-.265	1.203	.049	1	.826	1.304
State of deg**	-.588	1.048	.315	1	.575	1.801
Constant	13.529	12.676	1.139	1	.286	.000

*Situational leadership tenants
** Control variables
NOTE: Faculty Fem=average number of female faculty members; Faculty Male=average number of male faculty members; Race=race of subjects; State of degree=the state that subjects took the BOC exam; Subject GPA=subjects' highest GPA; Class size=number of students per graduating class; Faculty edu=highest level of degree; Facyrs teach=average number of years faculty taught; Fac ten stat=tenure status of most faculty members; Div=NCAA Division; Subjects SAT=subjects' highest SAT score; Age=age of subjects; Sex=sex of subject

Table 26 provides statistical output for a logistic regression calculation that predicted *considerate* on first-time pass rate of the BOC exam. See Table 2 for a description of *considerate*. A significant regression equation was found with *age* (.048, $p<.05$) and *SAT* (.038, $p<.05$), with an R^2 of .496. As age increases by one year, the likelihood of the passing the BOC exam on the first attempt decreases by 1.813 (B=-.595). As subjects' SAT score increases by one, the likelihood of passing the BOC on the first attempt increases dramatically (B=.009). Pass-rate is coded as 1=passed the first attempt and 0=did not pass the first attempt. Both *age* and *SAT* score are predictors of first-time pass rate when controlling for the variable *considerate*. All other variables were not significant.

Table 26

Logistic regression of considerate on first-time pass rate of the BOC exam.

DV –first time pass rate	B	S.E.	Wald	df	Sig.	Exp(B)
CONSIDERATE*	-.692	1.196	.335	1	.563	1.997
AGE**	-.595	.301	3.906	1	.048	1.813
Subject SAT**	.009	.005	4.307	1	.038	.991
Subject GPA**	-2.186	2.185	1.001	1	.317	8.897
Class size**	-.245	1.044	.055	1	.815	1.277
Faculty edu**	-1.250	1.070	1.365	1	.243	3.492
Faculty Fem**	-.259	.284	.829	1	.362	1.295
Faculty Male**	-.088	.286	.096	1	.757	1.092
Fac tenure stat**	-.456	1.168	.153	1	.696	1.578
State of deg**	-.065	.919	.005	1	.944	1.067
Constant	16.456	12.044	1.867	1	.172	.000

*Situational leadership tenants
** Control variables
NOTE: Faculty Fem=average number of female faculty members; Faculty Male=average number of male faculty members; Race=race of subjects; State of degree=the state that subjects took the BOC exam; Subject GPA=subjects' highest GPA; Class size=number of students per graduating class; Faculty edu=highest level of degree; Facyrs teach=average number of years faculty taught; Fac ten stat=tenure status of most faculty members; Div=NCAA Division; Subjects SAT=subjects' highest SAT score; Age=age of subjects; Sex=sex of subject

A logistic regression was calculated to predict *structure* on first-time pass rate of the BOC exam (see Table 27). (See Table 2 for a description of *structure*.) The regression equation was not significant (.623, p>.05) with an R^2 of .625. *Structure* cannot be used to predict first-time pass rate of the BOC exam. However, in the same regression calculation significance was found with *age* (.027, p<.05) and *SAT scores*(.050, p=.05), with an R^2 of .625. As age increases by one year, the likelihood of passing the BOC on the first attempt decreases by 1.939 (B=-.662). Further, as SAT scores increase by one point, the

likelihood of passing the BOC on the first attempt increases (B=.008). Pass-rate is coded as 1=passed the first attempt and 0=did not pass the first attempt. Therefore, age and SAT score can be used to predict first-time pass rate of the BOC exam.

Table 27

Logistic regression of structure on first-time pass rate of the BOC exam.

DV –first time pass rate	B	S.E.	Wald	df	Sig.	Exp(B)
AGE**	-.662	.300	4.881	1	.027	1.939
Subject SAT**	.008	.004	3.849	1	.050	.992
Subject GPA**	-2.316	2.236	1.073	1	.300	10.138
Class size**	-.081	1.020	.006	1	.937	1.084
Faculty edu**	-1.469	1.120	1.720	1	.190	4.347
Faculty Fem**	-.216	.298	.527	1	.468	1.242
Faculty Male**	-.025	.272	.009	1	.926	1.026
Fac tenure stat**	-.329	1.164	.080	1	.778	1.389
State of deg**	-.385	1.002	.148	1	.701	1.470
STRUCTURE*	.694	1.413	.241	1	.623	.500
Constant	14.100	12.340	1.306	1	.253	.000

*Situational leadership tenants
** Control variables
NOTE: Faculty Fem=average number of female faculty members; Faculty Male=average number of male faculty members; Race=race of subjects; State of degree=the state that subjects took the BOC exam; Subject GPA=subjects' highest GPA; Class size=number of students per graduating class; Faculty edu=highest level of degree; Facyrs teach=average number of years faculty taught; Fac ten stat=tenure status of most faculty members; Div=NCAA Division; Subjects SAT=subjects' highest SAT score; Age=age of subjects; Sex=sex of subject

Finally, a logistic regression equation was calculated to determine if tenants of both transformational and situational leadership styles could predict first-time pass rates of the BOC exam. Table 28 provides statistical output for the regression equation. A significant regression equation was found for *behaviors* (.040, $p<.05$) and *SAT scores* (.030, $p<.05$), with an R^2

of .613. As students' exposure to *behaviors* (a tenant of transformational leadership; see Table 1 for a description) increases by one score on the transformational leadership scale, the likelihood of passing the BOC exam on the first attempt increases by .021 (B=3.846). Further, as SAT score increases by one point, the likelihood of passing the BOC exam on the first attempt increases (B=3.846). Pass-rate is coded as 1=passed the first attempt and 0=did not pass the first attempt. Therefore, both the transformational leadership tenant *behavior* and *SAT scores* are significant predictors of first-time pass rate of the BOC exam.

Table 28

Logistic regression of transformational leadership and situational leadership on first-time pass rate of the BOC exam.

DV –first time pass rate	B	S.E.	Wald	df	Sig.	Exp(B)
ATTRIBUTES*	-2.017	2.555	.623	1	.430	7.517
BEHAVIORS*	3.846	1.877	4.198	1	.040	.021
MOTIVATION*	-.584	1.466	.158	1	.691	1.793
INTELL STIM*	-.166	1.468	.013	1	.910	1.181
INDIVID CONSID*	-1.588	1.551	1.048	1	.306	4.893
CONSIDERATE**	-.810	1.632	.247	1	.620	2.248
STRUCTURE**	.618	2.297	.072	1	.788	.539
Subject SAT***	.007	.003	4.723	1	.030	.993
State of deg***	-1.100	1.262	.760	1	.383	3.003
Subject GPA***	.682	2.347	.085	1	.771	.505
Class size***	1.444	1.135	1.617	1	.204	.236
Fac tenure stat***	1.380	1.241	1.236	1	.266	.252
InstDiv***	-1.753	1.489	1.386	1	.239	5.770
Constant	-4.819	9.261	.271	1	.603	123.818

* Transformational leadership tenants
** Situational leadership tenants
*** Control variables
NOTE: Faculty Fem=average number of female faculty members; Faculty Male=average number of male faculty members; Race=race of subjects; State of degree=the state that subjects took the BOC exam; Subject GPA=subjects' highest GPA; Class size=number of students per graduating class; Faculty edu=highest level of degree; Facyrs teach=average number of years faculty taught; Fac ten stat=tenure status of most faculty members; Div=NCAA Division; Subjects SAT=subjects' highest SAT score; Age=age of subjects; Sex=sex of subject

Summary of key findings

The purpose of this research is to identify if athletic training students' exposure to transformational leadership and situational leadership is a predictor of competency. Competency is based on the first-time pass rate of the BOC exam.

In this study, 322 subjects completed and submitted the online survey. One hundred one subjects (n=101) met the requirements consisting of graduating from an accredited

athletic training education program, took the BOC exam at least once (pass or fail), and have been certified for 6 years or less. Fifty-four (53%) subjects graduated from an accredited ATEP in the Commonwealth of Pennsylvania. Fifty-five (54%) subjects passed the BOC on the first attempt. Sixty-eight subjects (67%) were certified for three years or less. The average age of subjects was 25 years old and the majority of subjects were female (n=70). The average SAT score was 1172.

Hypothesis and research testing

1. Athletic training students who are exposed to transformational leadership behavior from educators in their ATEP are more likely to pass the BOC exam on their first attempt.

The first hypothesis is not supported in this research and therefore, we should fail to reject the null hypothesis. However, the transformational leadership tenant *behaviors* is a standalone predictable measure of first-time pass rate of the BOC exam. Significance was found when *behaviors* was regressed on first-time pass rates (Table 19 and Table 28). This finding suggests that the more students were exposed to leaders who expressed their own values and beliefs, stressed the importance of having a strong sense of purpose, considered the moral and ethical consequences of decisions, and emphasized having a collective sense of

mission (see Table 1) the more likely they were to pass the BOC exam on the first attempt.

2. Athletic training students who are exposed to situational leadership behavior from educators in their ATEP are more likely to pass the BOC exam on their first attempt.

Hypothesis two is not supported because *considerate* and *structure* were not significant in any of the models. Therefore, we fail to reject the null hypothesis. Neither *considerate* or *structure* are predictors of first-time pass rate.

3. Athletic training students who are exposed to more than one leadership style from educators in their ATEP are more likely to pass the BOC exam on the first attempt.

Hypothesis three is not supported; neither transformational leadership nor situational leadership are good predictors of first-time pass rate. However, there is a standalone tenant of transformational leadership that is significant. Table 20 illustrates that *behavior* is significant when regressing all transformational leadership and situational leadership tenants on first-time pass rate.

Research question

Do athletic training students who are exposed to transformational and situational leadership behaviors from

educators in their ATEP relate to student competence as measured by the BOC exam?

Since all tenants of transformational leadership and situational leadership are not collectively significant, we fail to reject the null hypothesis. Therefore, neither transformational leadership nor situational leadership can be used to predict first-time pass rates of the BOC exam. However, the transformational leadership tenant *behaviors* is significant when the regression equation involves all other transformational leadership tenants (Table 19) as well as when the equation includes the situational leadership tenants (Table 28). The transformational leadership tenant *behaviors* is not significant when regressed alone (Table 23). This difference can be explained through the variance between the two models. The regression equation that calculates all transformational leadership variables (Table 19) explains 67.7% of the variance, while the regression equation that calculates *behaviors* alone, explains 56.6% of the variance. This difference in model strength suggests that all transformational leadership variables should be considered to produce the best fit and more accurately explain the variance of the model.

CHAPTER 5

DISCUSSION AND CONCLUSIONS

Introduction

Literature related to leadership styles usefulness in education exists suggesting that athletic training educators and athletic training education programs are successful when engaging in transformational (Laurent and Bradney, 2007) and situational (Meyer, 2002) leadership behaviors. Transformational leadership is an organizational-centered leadership style in that it promotes changing the values, beliefs, and mission of students to reflect those of the institution (Conger, 1999; Pittinsky and Simon, 2007; Yukl, 1999). Further, transformational leadership in education rests on leaders' abilities to promote extra efforts (Conger; Lowe, Kroeck, and Sivasubramaniam, 1996; Pounder, 2008; Yukl) from students to engage in outside the classroom learning opportunities.

Situational leadership is a student-centered style of leadership that relies on leaders' ability to provide appropriate feedback and support to students based on need (Blanchard, Zigarmi, and Nelson, 1993; Gardner and Harrelson, 2002; Graeff, 1983; Vecchio and Boatwright, 2002).

The purpose of this research is to determine if there is a relationship between leadership styles that athletic training students are exposed to in athletic training education programs

and athletic training students' competence as measured by the first-time pass rates of the BOC exam. This research focuses on assessing leadership exposure of the ATEP as a whole (as opposed to assessing an individual leader in the ATEP), which reflects the aggregate leadership profile of the ATEP.

Literature (Laurent and Bradney, 2007; Meyer, 2002; Kutz, 2008) suggests that leadership can be effective in motivating athletic training students to improve competence in order to practice as an athletic trainer. Competence in athletic training is measured by the BOC exam; first time pass rates for athletic training education programs is a measure of program success. For this reason, first-time pass rate was chosen as the dependent variable.

This chapter is divided into three sections. First, a discussion of the results; second, it will draw conclusions based on these findings, and lastly, yield recommendations for future research.

Leadership findings

Regression equations do no support the claim that transformational leadership (Table 19) and situational leadership (Table 25) models predict first-time pass rates of the BOC exam. Therefore, hypothesis one and hypothesis two are not accepted and the null hypothesis is not rejected.

My research suggests that leaders in athletic training education programs who influenced students through specific behaviors could predict first-time pass rates of the BOC exam. These behaviors include leaders that talked about their own important values and beliefs, emphasized the importance of having a strong sense of purpose, considered the moral and ethical consequences of their decisions, and emphasized having a strong sense of mission among the group. The more exposure students had to leaders with these attributes and controlling for other variables, the more likely the students were to pass the BOC exam on the first attempt (see Table 19 and Table 20; these attributes are coded as *behaviors* in the regression models). These behaviors suggest that transformational leadership can have an impact on student competence; however, only this particular factor was a significant predictor of first-time pass rate of the BOC exam.

This finding with transformational leadership supports the claim that this particular style of leadership can impact organizational success. Transformational leadership is a behavior that a leader may engage in (consciously or subconsciously) and is exemplified when the leader clearly shares the vision, beliefs, and values of the organization (Lowe, Kroeck, Sivasubramaniam, 1996). Further, the leader takes into account the needs of the followers in an effort to motivate

followers to work towards the vision, beliefs, and values established. In doing so, it is argued that leaders have the ability to help followers exceed their expectations (Conger, 1999; Lowe, Kroeck, Sivasubramaniam; Yukl, 1999) and, therefore, have a positive impact on predetermined outcomes. Although the only tenant (*behaviors)* of transformational leadership that was significant reflects these behaviors, it is worth noting it as a predictor of first-time pass rates of the BOC exam. Further, it should also be noted that this factor (*behaviors*) was only a predictor when all other leadership factors were included in the regression equation; in other words, it was not a predictor when included in the regression model alone (see Table 23). This finding suggests that behaviors in transformational leadership are more predictive than other leadership variables tested.

Additional findings

A common thread exists throughout the results of the data pertaining to SAT scores. The consistent finding throughout regression equations suggests that, with all things being equal, as SAT scores increase, first-time pass rates of the BOC exam increase. This finding supports other research in terms of determining student competence, success, and likelihood of passing national board exams. Burke (2005), found that students with lower SAT scores were less likely to pass their respective professional certification exam on the first attempt. This study

provided evidence in respect to nursing board exams as well as teaching/educator board exams. Ukpabi (2008) supports this claim specific to nursing board exams. However, this study tested SAT, ACT, and GPA of students and concluded that all three scores can be predictors of first-time pass rates of the nursing board exam. Finally, a study specific to athletic training education (Platt, Sammarone, and McGlumphy, 2001) suggests that SAT scores are a predictor of board examination pass rates. The current research finding regarding SAT scores supports the 2001 research and further strengthens it with evidence that higher SAT scores can predict first-time pass rates of the BOC exam. The mean SAT score in my research was 1172 (Table 9).

Grade point average has conflicting evidence in regard to student success. In my research, GPA was not a predictor of first-time pass rates of the BOC exam. This finding is consistent with literature (Platt, Sammarone, and McGlumphy, 2001); however, GPA was found to be a predictor of program and academic success in physical therapy education programs (Balogun, Karacoloff, and Farina, 1986). The dependent variable was passing of the physical therapy board exam and did not decipher between first-time pass rate and multiple attempt pass rate. Therefore, these results cannot be compared to my research outcomes because the dependent variable is first-time pass rate of the BOC exam. Another study suggests that high school GPA can

be a predictor of physical therapy student academic success (DAY, 1986). Success, however, was measured by students' GPA at the end of their master's degree and should not be compared to my research results based on the measure of the dependent variable (first-time pass rate of the BOC exam).

Another common finding is the relationship with age and first-time pass rate of the BOC exam. Models (see Table 19, Table 26, and Table 27) that regress age on first-time pass rate of the BOC exam suggest that, controlling for other variables, as a person's age increases they are less likely to pass the BOC exam on the first attempt. Although literature is lacking in regard to first-time pass rates of certification exams, this finding makes logical sense. First, as students become older, they tend to forget information taught in undergraduate programs; therefore, the longer they wait to take the certification exam, the less information they are able to retain. There is, however, conflicting evidence of how age impacts student success on nursing board exams (it should be noted that these studies did not delineate between first-time pass rates and multiple-time pass rates). For example, literature exists (Byrd, Garza, and Nieswiadomy, 1999) that suggests age is not a predictor of nursing student success on the board exams. The majority of students in this study were 19-28 years old (51.9%). Future research may look at the older age subjects to determine

if their success on the nursing board exam is different from the 19-28 year old sample.

Gohara et al. (2011) concluded that the older a medical student is, the less likely he or she is to pass the medical licensing board exam. Again, this study concentrated on overall pass rate and not on first-time pass rate. Therefore, the results cannot be generalized and applied to my research.

Conclusion

Determining the degree to which athletic training students are exposed to leadership styles and how these styles relate to competence as measured by the BOC exam can offer insight for athletic training educators in regard to effective motivational behaviors that can impact student competence as well as program success. Further, determining the impact that particular leadership styles have on student competence can help ATEPs direct their attention toward these particular leadership styles to help improve student outcomes (Robinson, Lloyd, and Rowe, 2008).

In my research, transformational and situational leadership does not predict first-time pass rate of the BOC exam. This finding is useful for my research because of current literature that suggests that these leadership styles are important for student success (Laurent and Bradney, 2007; Meyer, 2002). However, the arguments made do not clearly operationalize

student success nor do they provide a means to assess student success. My research operationalized student success as competence as measured by the first-time pass rate of the BOC exam. Therefore, the conclusion drawn is that transformational leadership and situational leadership are not predictors of first-time pass rate. However, future research should consider operationalizing student success in ways that may be impacted by these and other leadership styles.

Certain behavioral factors of transformational leadership can predict first-time pass rate of the BOC exam and should be considered as impacting student competence. Students who are exposed to educators that talk about their own important values and beliefs, emphasize the importance of having a strong sense of purpose, consider the moral and ethical consequences of their decisions, and emphasize having a strong sense of mission among the group have a higher tendency of passing the BOC exam on the first attempt.

Age and SAT scores were also found to be predictive measures of first-time pass rate of the BOC exam. These additional findings as well as the attributes of transformational leadership mentioned above can be useful for athletic training education program faculty as they make decisions for student admissions as well as program promotion.

If the objective of an ATEP is to promote first-time pass

rates of the BOC exam, my research suggests that students who are under the age of 26 and who's SAT scores are above 1172 are more likely to achieve this goal. Further, athletic training educators can help foster these outcomes, according to this research, if they talk about their own important values and beliefs, emphasize the importance of having a strong sense of purpose, consider the moral and ethical consequences of their decisions, and emphasize having a strong sense of mission among the group.

Recommendations for future research

This research yielded findings that suggest factors other than transformational leadership and situational leadership can predict first-time pass rates of the BOC exam. In particular, SAT scores consistently predict first-time pass rates of the BOC exam (Burke, 2005; Ukpabi, 2008; Platt, Sammarone, and McGlumphy, 2001); future research should not overlook this common thread and should continue to control for this predictor.

Conflicting evidence between findings in my research and other research suggest that operationalizing student success should be more clearly defined. My research defined student success through competency level of athletic trainers. Specifically, competency as measured by the first-time pass rate of the BOC exam. Other research operationalized student success solely on passing of certification board exams regardless of the

attempts needed to pass (Balogun, Karacoloff, and Farina, 1986; Day, 1986; Byrd, Garza, and Nieswiadomy, 1999; Gohara et al. 2011). These inconsistencies made comparisons to my research impractical. It is recommended that future research focus on first-time pass rates of national boards as the dependent variable. Lastly, athletic training education programs should be cautious when implementing leadership styles as a measure of student success. This research does not support transformational leadership or situational leadership as predictors of first-time pass rates of the BOC exam. With that said, this finding should not discourage researchers from exploring other leadership styles that may impact first-time pass rates.

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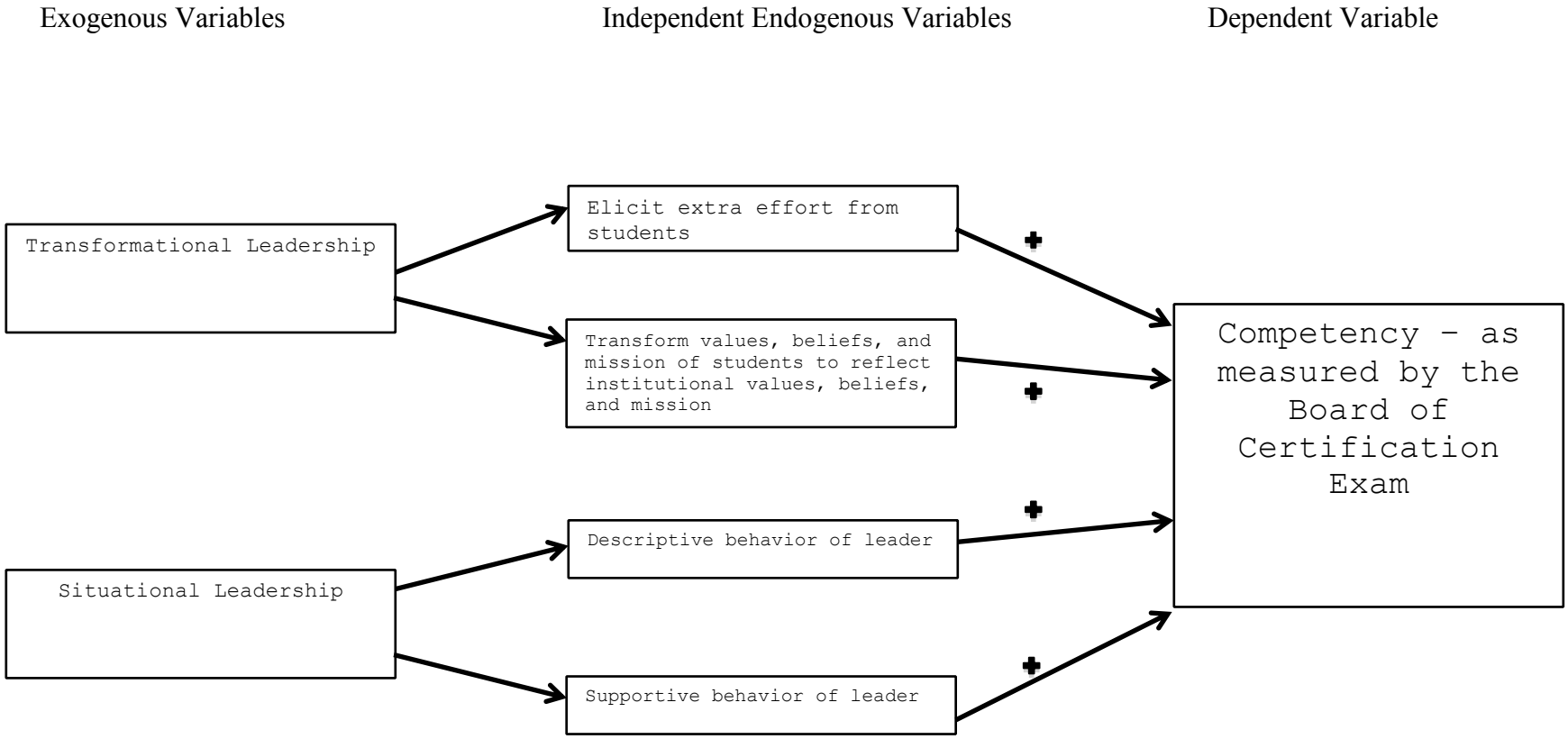
Appendix A
Matrix Providing Leadership Theory, Proponent, and Definition

Leadership Theory	Proponent	Definition
Transformational	James MacGregor Burns, 1978	Leadership based on changing the values and beliefs of the constituents to reflect the values and beliefs of the organization. In doing so, the leader inspires constituents to become committed to the values and beliefs, influences constituents to work beyond what is expected of them, and ultimately meets the needs of the organization.
Situational	Hersey and Blanchard, 1969	Leadership based on the needs of the constituent. Leaders provide directive (detailed and step-by step) support for the constituent who has a low maturity and knowledge base. Leaders provide supportive behavior (observation, encouraging, and hands-off behavior) for constituents who have a higher level of maturity and greater knowledge base. Situational leadership is constituent-centered by focusing on the need of the constituent and the situation he or she is faced with.
Path-goal	Evans, House, Dessler, and Mitchell, 1970s	Leadership based on helping the constituent reach his or her highest potential. Leaders' are expected to provide the means by which constituents can achieve their goals (i.e., provide opportunities for students to master their skills). Further, leaders help constituents through conflict, obstacles, or other variables that may threaten goal achievement.
Team	Susan Kogler Hill, early to mid 19th century	Leaders and constituents are considered to be equal participants in the organization. Decisions making is one of the important tenants in team leadership. Therefore, collaborative decision-making that takes into consideration leaders' perspectives as well as constituents' perspectives is important in making the best decision for the given situation. Further, members of the team can exercise their unique strengths in contributing to decision-making. Dialog between team members provides those with less knowledge the opportunity to learn.

Appendix B
Visual theory model of leadership and its effect on competency.



Appendix C
Survey – Assessment of leadership styles in undergraduate athletic training education programs

Demographic Information

1. What is your sex? Male ☐ Female ☐

2. What is your age?

3. What is your race? -Select- If other, specify here

4. How many years have you been certified as an athletic trainer? -Select-

5. From what state did you earn your bachelor degree to allow you to sit for the BOC Exam?

6. What was your highest SAT Score for: Math -Select-Critical Reading -Select- Writing -Select-

7. What was your GPA/QPA when you graduated from that institution? Select the appropriate range

8. How many students in your class graduated from your undergraduate athletic training education program (UATEP)? -Select-

9. Have you passed the BOC Exam?-Select-
   If yes, how many attempts did it take you?-Select-
   If no, how many attempts have you made?-Select-

10. What was the highest degree obtained by the majority of faculty members in your UATEP (ie, the majority had their: doctoral degree, master's degree, bachelor degree)?-Select-

11. What is the average number of years taught by faculty in your required UATEP courses or who were involved in your required clinical education? -Select-

12. What was the tenure status of the majority of faculty members who taught in your required UATEP course? -Select-

13. What was the student to faculty ratio at your UATEP at the time of your graduation? (ie, 8 students to 1 faculty is 8:1)

14. How many faculty members who taught required courses in your UATEP or who were involved in your required clinical education were

Male Female

15. What athletic level is your institution considered?-Select-

16. Did you engage in any programs that were intended to help you prepare specifically for the BOC Exam? (ie, ACES workshop)

-Select-

If yes, what was the name of the program?

This survey is used to describe the leadership styles experienced while enrolled in your undergraduate athletic training education program (UATEP). Please answer each item based on how you perceived educators' leadership styles in your UATEP.

Educators in your UATEP are faculty members who taught required athletic training courses and/or were affiliated with your required clinical education.

The word "others" may mean your peers, classmates, educators, patients, and/or all of these individuals.

If you feel you cannot answer a question or a question is not relevant, select N/A.

Use the following scale:

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always	Not relevant/ cannot answer
0	1	2	3	4	N/A

1. Instilled pride in me for being associated with them	0	1	2	3	4	N/A
2. Talked about their most important values and beliefs	0	1	2	3	4	N/A
3. Talked optimistically about the future	0	1	2	3	4	N/A
4. Re-examined critical assumptions to questions whether they are appropriate	0	1	2	3	4	N/A
5. Spent time teaching and coaching (mentoring)	0	1	2	3	4	N/A
6. Went beyond self-interest for the good of the group	0	1	2	3	4	N/A
7. Specified the importance of having a strong sense of purpose	0	1	2	3	4	N/A
8. Talked enthusiastically about what needed to be accomplished	0	1	2	3	4	N/A
9. Sought differing perspectives when solving problems	0	1	2	3	4	N/A
10. Treated me as an individual rather than just as a member of a group	0	1	2	3	4	N/A
11. Acted in ways that built my (self) respect	0	1	2	3	4	N/A
12. Considered the moral and ethical consequences of decisions	0	1	2	3	4	N/A
13. Articulated a compelling vision of the future	0	1	2	3	4	N/A
14. Taught me to look at problems from many different angles	0	1	2	3	4	N/A
15. Considered me as having different needs, abilities, and aspirations from others	0	1	2	3	4	N/A
16. Displayed a sense of power and confidence	0	1	2	3	4	N/A
17. Emphasized the importance of having a collective sense of mission	0	1	2	3	4	N/A
18. Expressed confidence that goals would be achieved	0	1	2	3	4	N/A
19. Suggested new ways of looking at how to complete assignments	0	1	2	3	4	N/A
20. Helped me to develop my strengths	0	1	2	3	4	N/A

Answer the following questions based on the frequency the educators in your UATEP engaged in the behavior described by the item. Remember that educators are considered faculty members who taught required athletic training courses and/or were affiliated with your required clinical education.

If you feel you cannot answer a question or a question is not relevant, select N/A.

Use the following scale:

Always	Often	Occasionally	Seldom	Never	Not relevant/ cannot answer
A	B	C	D	E	N/A

1. Were friendly and approachable	A	B	C	D	E	N/A
2. Let group members know what was expected of them	A	B	C	D	E	N/A
3. Did little things to make it pleasant to be a member of the group	A	B	C	D	E	N/A
4. Encouraged the use of uniform (consistent) procedures	A	B	C	D	E	N/A
5. Put suggestions made by the group into operation	A	B	C	D	E	N/A
6. Tried out their ideas in the group	A	B	C	D	E	N/A
7. Treated all group members as their equals	A	B	C	D	E	N/A
8. Made their attitudes clear to the group	A	B	C	D	E	N/A
9. Gave advance notice of changes	A	B	C	D	E	N/A
10. Decided what should be done and how it should be done	A	B	C	D	E	N/A
11. Kept to themselves	A	B	C	D	E	N/A
12. Assigned group members to particular tasks	A	B	C	D	E	N/A
13. Looked out for the personal welfare of group members	A	B	C	D	E	N/A
14. Made sure their part in the group was understood by the group members	A	B	C	D	E	N/A
15. Were willing to make changes	A	B	C	D	E	N/A
16. Scheduled the work to be done(provided specific deadlines and task criteria)	A	B	C	D	E	N/A
17. Refused to explain their actions	A	B	C	D	E	N/A
18. Maintained definite standards of performance	A	B	C	D	E	N/A
19. Acted without consulting the group	A	B	C	D	E	N/A
20. Asked that group members follow standard rules and regulations	A	B	C	D	E	N/A

Appendix D
RTAF-Committee Signatures

RESEARCH TOPIC APPROVAL FORM

Banner ID# @02353788

Name: Michael P. Meyer

Address: 215 Lincoln Ave

City, State, Zip Bentleyville, PA, 15314

Phone Number: 724-503-8474 E-Mail: m.p.meyer@iup.edu

When this form has been returned to the Thesis/Dissertation Office in the Graduate School (120 Stright Hall), and after IRB or IACUC approval, if needed, the Assistant Dean will notify the student that the research proposal has been approved. **The student cannot begin thesis/dissertation research activity beyond preliminary steps (such as background research, IRB/IACUC approved pilot study, or three-chapter review) until notice of approval has been received.** If RTAF approval is marked "conditional pending outside reader approval," the student may commence thesis/dissertation research but CANNOT defend or graduate until the outside reader is approved.

PLEASE NOTE: IF CHANGES OCCUR, EITHER IN COMMITTEE MEMBERSHIP OR TOPIC, A NEW FORM MUST BE COMPLETED AND APPROVED.

SECTION I. (To be completed by the student)

☐ Thesis ☒ Dissertation

Department: Sociology

Degree: Ph.D

Title of Study: The impact of leadership styles in athletic training education programs on athletic training students' competence

ATTACH TO THIS FORM A **BRIEF 1-2 PAGE SUMMARY** OF YOUR RESEARCH TOPIC, including the method of study you expect to use, materials and equipment you will need, and an estimated time frame to complete each step of the process.

Check which one of the approved style manuals you will be using:

- ☐ American Chemical Society, *The ACS Style Guide*, Third Edition
- ☒ American Psychological Association, *Publication Manual*, Sixth Edition
- ☐ American Sociological Association, *ASA Style Guide*, Second Edition
- ☐ Council of Science Editors, Inc., *Scientific Style and Format*, Seventh Edition
- ☐ Modern Language Association, *MLA Handbook...Research Papers*, Seventh Edition
- ☐ Turabian, *A Manual for...Theses, Dissertations*
- ☐ Society for American Archaeology, *American Antiquity Editorial Policy, Information for Authors, and Style Guide*

Signature of Student

Date: 11-25-2011 Anticipated Graduation Date: May 2012

11/09/11

SECTION II. (To be completed by thesis/dissertation committee and pertinent university administrators)

Having affixed my signature below, I hereby approve the research proposal and agree to serve on the above student's thesis/ dissertation committee (3 to 5 faculty on the committee).

For non-PASSHE faculty committee members, attach a copy of the request for APSCUF approval written by either the department chair or the graduate coordinator.

12/9/11 William R. Donner
(Date) (Typed or printed name and signature of Committee Chairperson)

12/09/2011 Thomas Novak
(Date) (Typed or printed name and signature of Committee Member)

12-21-2011 LINDA P. MEYER
(Date) (Typed or printed name and signature of Committee Member)

(Date) (Typed or printed name and signature of Committee Member)

(Date) (Typed or printed name and signature of Committee Member)

College Approvals: (To be completed by Graduate Coordinator) _____ Number of credits required by department for this thesis or dissertation. This number will be entered into the database and will determine when the chairperson can receive compensation for chairing the thesis or dissertation.

_____ **Graduate Coordinator** Date _____
(Department Chairperson may sign in the absence of Graduate Coordinator)

_____ *Date transmitted to College Dean's Office*

_____ As Dean of the College, I will serve on the above committee.

_____ As Dean of the College, I hereby appoint the following person to serve on the committee as my representative:
Name: _____

_____ I choose neither to serve on the committee nor to appoint a representative.

_____ **Dean of the College** Date _____

School of Graduate Studies & Research Approval:

Signature _____ Date _____
Assistant Dean for Research

IRB Review Required: _____ Yes _____ No

Date Protocol Received _____ Date of Approval _____

Animal Care Review Required: _____ Yes _____ No

Date Protocol Received _____ Date of Approval _____

Appendix E
Institutional review board approval

Indiana University of Pennsylvania
www.iup.edu

Institutional Review Board for the
Protection of Human Subjects
School of Graduate Studies and Research
Stright Hall, Room 113
210 South Tenth Street
Indiana, Pennsylvania 15705-1048

P 724-357-7730
F 724-357-2715
irb-research@iup.edu
www.iup.edu/irb

February 23, 2012

Michael P. Meyer
215 Lincoln Avenue
Bentleyville, PA 15314

Dear Mr. Meyer:

Your proposed research project, "The impact of leadership styles in athletic training education programs on athletic training students' competence," (Log No. 12-020) has been reviewed by the IRB and is approved as an expedited review for the period of February 23, 2012 to February 23, 2013.

It is also important for you to note that IUP adheres strictly to Federal Policy that requires you to notify the IRB promptly regarding:

1. any additions or changes in procedures you might wish for your study (additions or changes must be approved by the IRB before they are implemented),
2. any events that affect the safety or well-being of subjects, and
3. any modifications of your study or other responses that are necessitated by any events reported in (2).

Should you need to continue your research beyond February 23, 2013 you will need to file additional information for continuing review. Please contact the IRB office at (724) 357-7730 or come to Room 113, Stright Hall for further information.

Although your human subjects review process is complete, the School of Graduate Studies and Research requires submission and approval of a Research Topic Approval Form (RTAF) before you can begin your research. If you have not yet submitted your RTAF, the form can be found at http://www.iup.edu/page.aspx?id=91683 .

This letter indicates the IRB's approval of your protocol. IRB approval does not supersede or obviate compliance with any other University policies, including, but not limited to, policies regarding program enrollment, topic approval, and conduct of university-affiliated activities.

I wish you success as you pursue this important endeavor.

Sincerely,

John A. Mills, Ph.D., ABPP
Chairperson, Institutional Review Board for the Protection of Human Subjects
Professor of Psychology

JAM:jeb

xc: Dr. William Donner, Dissertation Advisor
Ms. Brenda Boal, Thesis and Dissertation Secretary

Appendix F
RTAF-Office of the Assistant Dean for Research School of Graduate Studies and Research

Indiana University of Pennsylvania
www.iup.edu

Office of the Assistant Dean for Research
School of Graduate Studies and Research
Stright Hall, Room 113
210 South Tenth Street
Indiana, Pennsylvania 15705-1048

P 724-357-7730
F 724-357-2715
www.iup.edu/research

March 6, 2012

Michael P. Meyer
215 Lincoln Avenue
Bentleyville, PA 15314

Dear Mr. Meyer:

Now that your research project has been approved by the Institutional Review Board for the Protection of Human Subjects, I have signed your Research Topic Approval Form. In order to graduate in May 2012, doctoral students' Research Topic Approval Forms had to be received in my office by August 15, 2011. Unfortunately, I did not receive your form until February 8, 2012. Since you did not meet the deadline, the earliest date that you will be able to graduate is December 2012. You must apply for graduation by October 1, 2012. This means that your dissertation must be submitted to the School of Graduate Studies and Research by November 15, 2012.

The Thesis/Dissertation Manual, additional resources, and information to help you start writing can be found at http://www.iup.edu/graduatestudies/thesis/default.aspx.

Also, The Applied Research Lab provides free assistance with statistical analysis and research design--both quantitative and qualitative--to all IUP students. The ARL can also provide assistance in the use of the features in Word and Acrobat you'll need to correctly format your thesis/dissertation. For more information, please visit http://www.iup.edu/arl/default.aspx.

You are now eligible to receive a FREE copy of Adobe Professional! This software will help you to create an electronic thesis or dissertation. It can be picked up at the IT Support Center, G35 Delaney Hall. If you live off campus, you can send an email from your IUP email account to it-support-center@iup.edu. Please indicate you are a graduate student requesting Adobe Professional and include your Banner ID, mailing address, and which version - Windows or Mac.

Finally, if you change your topic, the scope or methodology of your project, or your committee, a new Research Topic Approval Form must be completed. I wish you well and hope you find this experience to be rewarding.

Sincerely,

Hilliary E. Creely, J.D., Ph.D.
Assistant Dean for Research

xc: Dr. Yaw Asamoah, Dean
Dr. John Anderson, Graduate Coordinator
Dr. William Donner, Dissertation Advisor
Ms. Julie Bassaro, Secretary

HEC/bb