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Student-Athlete Academic and Athletic Identity and Self-Efficacy

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STUDENT-ATHLETE ACADEMIC AND ATHLETIC IDENTITY AND SELF-EFFICACY

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Abstract

The present study was designed to gain insight into student-athlete identity and self-efficacy. The study will discuss findings from a confirmatory analysis of the internal consistency reliability and validity of two scales found by using Cronbach's alpha and confirmatory factor analysis. This is discussed in the instruments area of the Methods section. The main part of the study seeks to gain insight into the academic and athletic identity of student athletes and if and how that identity relates to student's academic and athletic self-efficacy. A sample of 108 current Division I Student-Athletes at a large southeastern university were administered a series of three short surveys which asked questions about their athletic and academic identity, as well as their academic self-efficacy and their athletic self-efficacy. Analysis involved determining the relationship between the identity and self-efficacy of student-athletes, and analyzing other factors that influence this relationship. Findings revealed that student-athletes at this institution possessed high levels of academic and athletic identity, as well as high academic self-efficacy and athletic self-efficacy. A slight positive correlation was found between academic identity and self-efficacy as well as athletic identity and self-efficacy. Furthermore, a positive correlation between academic self-efficacy and performance was found, supporting prior literature claiming that self-efficacy is related to performance. Finally, demographic factors impacting mean scores and correlations are discussed.

Keywords: student-athlete, academic identity, athletic identity, academic self-efficacy, athletic self-efficacy

Statement of the Problem

As the field of intercollegiate athletics continues to gain popularity and the number of intercollegiate student-athletes grows, the need for further research examining the role and the identity of the student-athlete increases. The complexity of the dual identity of the student-athlete is important to understand and research in relation to self-perceptions of ability, both athletic and academic, to provide insight and understanding of this growing group of students. Faced with demands both athletic and academic in nature, participants in Division I Intercollegiate Athletics may identify stronger with the academic or athletic role, depending on a number of influential factors. One such factor may be the student's self-efficacy in both athletics and academics. If self-efficacy in academics and athletics relates to a student-athlete's identity, educators and coaches will have an opportunity to alter the way that they work with these students to get the optimal results both on and off the field.

As less than two percent of the 460,000 intercollegiate student-athletes continue playing their sports after college professionally (NCAA, 2013), it is essential to continue to seek a better understanding of the motivational factors influencing these students so that they can be prepared for life after their athletic career is over. By doing so, athletic and academic faculty and staff can more effectively support and work with a population of our student body who face the challenge of balancing normal student activities as well as the expectations and commitments required of their sport; working with these students to help them cope with the challenges of being a student-athlete is essential as these high profile students often serve as the face of a university and are an integral part of American society and culture.

By performing confirmatory analyses on two newly developed scales, the Academic and Athletic Identity Scale (AAIS; Yukhymenko-Lescroat, 2014) and the Athletic Self-Efficacy

Scale (Shelangoski, Hambrick, Gross, & Weber, 2014) and by acquiring insight into the relationship between student-athlete identity and self-efficacy in the domains of athletics and academics, this study adds to the body of literature on student-athletes. Through this investigation, the research seeks to provide insight that will help guide best practices for working with this distinctive population of students. The following review of the literature focuses on two primary areas of concern: identity and self-efficacy as they relate to the student-athlete.

Review of the Literature:

Identity

Social identity, conceived by Tajfel (1979) is a person's sense of who they are based on their group membership. He suggested that the social groups and organizations to which people belong are an important source of pride and self-esteem. He thought that belonging to a certain social group contributes to a person's identity and self-esteem, and therefore influences behavior. Furthermore, he proposed that if we define ourselves in terms of our membership within a group, we define others the same way, and categorize them into social groups. This theory gives context for the following discussion of student-athlete identity; student-athletes are expected to belong to two very different social groups, but may identify more strongly with one than the other.

Research acknowledging and exploring the dual identity of the student-athlete is limited, but not absent. However, most of the literature has focused on athletic identity and academic identity separately. A number of studies will be addressed in this literature review that examine the identity of student-athletes and discuss the implications of their commitment to their identity role. Previous studies concerning student-athlete identity will be reviewed, and three primary scales will be discussed: one designed to measure academic identity, one designed to measure athletic identity and the last and most recent study designed to measure both academic and athletic identity. The first scale, the Athletic Identity Measurement Scale, defines athletic identity as "the degree to which an individual identifies with the athlete role," and was developed to explore the idea of Athletic Identity and form a scale that evaluates the strength and exclusiveness of that role among student-athletes. The second scale, the Measure of Student Identity, developed by Nancy Shields (1995) examined academic identity (the extent to which one identifies with the role of student) in relation to self-esteem and causal attributions; a main finding of the study was that student identity was related to many aspects of self-esteem. It is the

only scale discovered in the review of the literature that was developed specifically to address the student identity of college level individuals. The last scale discussed in this study is the Academic Athletic Identity scale, developed by Mariya A. Yukhymenko (2014), which is the first scale to examine both the academic and athletic aspects of student-athlete identity using one device; this is the instrument that will be used in the current study to assess student-athlete identity.

Relatively little literature focuses on the dual identity of student-athletes. Instead, a larger body of literature exists that examines their athletic identity. Many of the latest studies addressing the identity of the student-athlete tend to concentrate on the athletic identities of these students. The large majority of these studies use the Athletic Identity Measurement Scale (AIMS), which was developed by Brewer, Van Raalte and Linder (1993) to measure the extent to which a student-athlete identifies with the athletic role. Results of the study, which coined the term Athletic Identity and sought to develop a measure of it, suggest that the AIMS is a reliable and valid measure of athletic identity. Furthermore, results of the study indicated the strength and exclusivity of identification with the athletic role. This scale is decidedly the most utilized and well known in this area of research. It is comprised of 10 items on a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Scores can range from 10 to 70, with a higher score indicating stronger identification with the athletic identity. Although it was designed to be one-dimensional, subsequent studies found that the scale contains subscales measuring social identity (how much one feels that they occupy the role of athlete), exclusivity (how much one's self-worth is determined by inhabiting the athlete role) and negative affectivity (how much one experiences negative feelings due to sporting results or feelings of inadequacy or worry due to their athletic role). Despite the findings that the AIMS has multiple dimensions, a good deal of

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research has employed it as a unidimensional construct to gauge athletic identity, and often correlate it to another construct (Mignano, Brewer, Winter & Van Raalte, 2006; Bimper, 2014; Burns, Jasinski, Dunn & Fletcher, 2012; Feltz, Schneider, Hwuang & Skogsberg, 2013; Sturm, Feltz & Gilson, 2011; Lamont-Mills & Christensen, 2006).

Most of the literature on academic identity has been conducted focusing on the average college student, not student-athletes. One of these studies developed is The Measure of Student Identity by Nancy Shields (MSI; 1995). This scale is the most pertinent to measure academic identity. It is a Likert scale made up of 15 items designed to measure student identity. Student-athletes are asked to respond with a number ranging from 1 (strongly agree) to 5 (strongly disagree). The items were developed from interviews concerning the meaning of being a student, and 15 items were designed to create a measure of student identity with a higher score indicating higher student identity. The mean of this scale formed an overall student identity used in the study to compare with other constructs.

One study has used a combination of the preexisting scales measuring academic and athletic identity to indicate that there is a significant negative correlation between athlete identity and student identity (Sturm, Feltz & Gilson, 2011). This study used the AIMS scale to evaluate athletic identity and the MSI to measure academic identity. The researchers stated that the findings confirm previous research finding that as athlete identity increases, student identity decreases. A study by Bimper (2014) of African American male student-athletes measured athletic identity using the AIMS and compared these scores to GPA performance. The study indicated that those students displaying a higher athletic identity tended to have lower GPAs. Subsequent research has added to the battery of assessments of student-athlete identity, introducing scales such as The Baller Identity Measurement Scale, an adaptation of the AIMS

that includes some elements of the Student Athletes' Motivation toward Sports and Academics Questionnaire (SAMSAQ) and was designed to be more culturally relevant to specific groups of student-athletes. (Harrison, Tranyowicz, Bukstein, McPherson-Botts & Lawrence, 2014).

The only study to combine two scales to create a measure of student-athlete identity is a recent study by Yukhymenko–Lescroart, which developed the Athletic Academic Identity Scale (AAIS; 2014). This study sought to develop a scale that measures the extent to which being academically and athletically engaged are central to one's sense of self. The measure developed was intended to determine where student-athletes fall on the spectrum of identity ranging from completely student focused to completely athlete focused, and is the first scale to combine measures of academic and athletic identity. Quantitative methodologies were used in this multi-study to assess initial content validity, factorial validity and reliability and to confirm the validity and reliability of the instrument. This was the first study focused on developing a valid and reliable scale to assess the dual identity structure of the student-athlete and to conceptualize identity in terms of involvement in two different social dimensions-that of a student at an academic institution and that of an athlete involved in a sport team. Differences across sport participation level were found through administration of this scale; more advanced athletic involvement resulted in stronger athletic identity and weaker academic identity.

Previous studies have looked at both aspects of student-athlete identity using methods of data collection designed to obtain a broader scope of information (Adler & Adler, 1987; Potuto & O'Hanlon, 2007; Marx, Huffman & Doyle). Marx, Huffman and Doyle (2008) explored attitudes of student-athletes toward the student-athlete role and used surveys of 128 Division I student-athletes to how identity relates to their socialization experiences. They found that male and female athletes differ in their socialization experiences, and that their self-perceptions

correspond with the expectations of significant others. The study conducted by Potuto & O'Hanlon (2007) of 18 Division IA institutions examined student-athlete perceptions of overall college experience, but included questions specifically designed to gain information about student-athlete perceptions of their academic experiences. The sample was comprised of students who had completed 85% of their degree. Of the 930 students, 60% of those surveyed viewed themselves more as athletes than as students. Additionally, 53% indicated that they do not spend as much time on all aspects of their academic work as they would like. Yet when asked how important it is to you that you graduate from college, 93% of those surveyed responded "very important" and another 6.8% responded "important" or "somewhat important." This study recognized a discrepancy between student-athletes' intentions in terms of graduation and their identity. While the majority identified more as athletes, almost all listed graduation an important goal. Furthermore, while 68% said that they would have liked to have spent more time and pursued more educational opportunities available at their universities, the majority reported overall satisfaction with their experience as a student-athlete and their college experience, and accepted the consequences, such as limited time for academics, that were a result of the time demands placed on them by athletics.

Adler and Adler (1987) explored the identity of the student-athlete by observing basketball student-athletes over 4 years. They were interested in resolving student-athletes images of self as athlete and student which they termed "role conflict". Findings showed that students were experiencing role conflict due to the demanding athletic role, a peer subculture emphasizing athletics and recreation, a series of frustrations and failures in the academic realm, and a lack of the academic role being reinforced.

Another study by Killeya-Jones (2005) examined the idea of the role conflict that may emerge when an individual holds two competing roles within a shared domain that compete for temporal and psychological resources. This study employed the use of a hierarchical clustering model of identity structure and meaning (HICLAS), a qualitative measure, to evaluate student-athlete identity. The study focused on elite college student-athletes who were carrying out both the role of student and the role of athlete in a college environment. The study discovered that football players playing in an elite football program who valued academics and saw it as a part of their identity as much as athletics were more likely to feel greater life and academic satisfaction. Conversely, they found that football players who experienced incongruity in their dual roles as students and athletes were more likely to undergo depression and lower self-esteem. The study posed that the positive evaluation of the student role by an elite student-athlete is more important in the adjustment to college for elite athletic individuals.

Additional qualitative studies have used interviews to gain insight into student-athlete identity (Mahoney, M.L., 2011; Lally & Kerr, 2013). Other measures of student-athlete identity are the Student-Athletes Motivation Towards Sports and Academics Questionnaire (SAMSAQ; Gaston-Gayles), and the Motivated Strategies for Learning Questionnaire (MSLQ; Pintrick, Smith, Garcia & McKeachie, 1993). The SAMSAQ was designed to measure the academic and athletic motivation of student athletes. The MSLQ was created to measure college student's orientations of motivation. Although these studies add valuable insight into student-athlete identity, none of the methods of data collection were appropriate for the current study due to the length of the instruments or nature of the data, and they were not conceived with the goal of determining which identity prevails or if both are equally important when considering individual student-athletes.

It should be noted that since student-athlete identity is such a complex construct, many demographic factors have been found to impact it. The degree to which gender contributes to the identity of student-athletes is disputed in the literature. In a study comparing Athlete and Student Identity for Division I and Division III Athletes, gender emerged as a distinguishing variable in relation to identity (Sturm et al., 2011). The study found that female student-athletes possessed a stronger student identity than male student-athletes. In another study on female student-athletes competing at Division III co-educational and all-women's colleges (Mignano, Brewer, Winter & Raalte, 2006) found that student-athletes attending women's colleges more strongly identified with their role of athlete than those women enrolled at a Division III co-education college. One suggestion the authors give for this is that there is no male-domination of the sport world to compete with at the women's colleges, and women do not face as much societal pressure to be feminine. They are also awarded 100% of the athletic resources of their schools, and do not need to compete with male sports for resources. The authors purport that "when an environment strongly supports a particular identity, a person is more likely to incorporate that identity as an important part of who they are," (Mignano et al., via Cantor, Markus, Niedenthal & Nurius, 1986). Other studies on gender and identity suggest that gender stereotyping plays a role in both male and female student-athlete identity (Marx, Huffman & Doyle, 2008; Feltz, Schneider, Hwang & Skogsberg, 2013). Unlike the study by Sturm, Feltz & Gilson (2011), Yukhymenko–Lescroart (2014) did not find that gender impacted academic and athletic identity.

A review of the literature on gender as it relates to student-athlete identity provides varied conclusions about the relationship between a student-athlete's identity and gender.

Another key factor that has been shown to influence student-athlete identity is grade level and division level. According to some literature, similar athlete and student identity levels occur

in Division I student-athletes as at Division III schools (Sturm et al., 2011). Adler and Adler (1991) studied the salience of the athletic and academic identities. They found that while many student-athletes arrive at college with salient academic identities, over the course of the college career, often this academic salience decreases as academics are not reinforced and the athletic identity becomes more prominently established. Meyer (1990) conducted a qualitative cross-sectional study of twenty-three Division I women's volleyball and basketball players and found that incoming students (freshmen) tend to have high academic expectations upon entry into college, which may diminish as they progress in school. Students participating in high-profile sports are also more likely to be vulnerable to stereotype threat (that athletes are academically inferior to non-athletes) and have "weaker beliefs in their coach's opinion of their academic ability" (Feltz et al., 2013, p. 192). Both of these factors are influential to student-athlete identity formation.

In addition to gender and level of play and experience, race can also play a key role in determining the identity of the student-athlete. According to Beamon (2012), African American males tend to "overemphasize the role of athletics and nurture one identity, the athletic identity" (196). This may stem from the fact that athleticism is a substantial part of African American cultural identity and is also tied to masculinity (Smith, 2007). Beamon (2012) found that African American athletes are more likely than White athletes to consider sports as the central focus of their lives as well as feel that other people in their lives define them in terms of their athlete role. African American student-athletes are more likely to experience the phenomenon of identity foreclosure (which occurs when an individual commits entirely to a role without engaging in exploratory behavior before doing so) and, later, identity crisis when faced with retirement, and are unprepared to take on and build new identities. Bimper (2014) found that among black male

student-athletes, those with higher athletic identity tended to have lower GPA's. Additionally, male student-athletes' athletic identity was strongly positively correlated with stereotype threat, while female student-athletes' was not (Feltz et.al, 2013).

Self-efficacy

Self-efficacy is defined as "one's perceived capabilities for learning or performing actions at designated levels" (Schunk, Meece & Pintrick, 2014, p. 379). Bandura initially presented self-efficacy as an important theory in motivational education in 1977. Since then, research on self-efficacy has shown that it impacts achievement behaviors including choice of tasks, persistence and effort (Schunk, 1991). Self-efficacy is influenced by performance; performance success results in higher self-efficacy, and students with higher self-efficacy are more likely to be motivated to improve their skills (Schunk et al., 2014). Those people with low self-efficacy in a given area are more likely to avoid completing the task. Self-efficacy can be changed through persuasion from others, but will not endure unless it is paired with an accomplishment or successful performance.

Additionally, it is believed that people gain information to judge their own efficacy through prior performance accomplishments and failures at the task, observational experiences and persuasion (Schunk, 1991). When failure repeatedly occurs, self-efficacy lowers, but as soon as a strong sense of self-efficacy is established, it is not as easily impacted. Furthermore, high self-efficacy does not necessarily result in performance success; rather it is one of many factors that influence behavior. For instance, performance will not be successful if the person has high self-efficacy but lacks the requisite skills to complete the task. Schunk states, "Given adequate skills, positive outcome expectations, and personally valued outcomes, self-efficacy is hypothesized to influence the choice and direction of much human behavior" (p. 208). Although

much research on self-efficacy focuses on its impact on academic performance, self-efficacy theory has been researched in many other fields as well, including athletics.

The theory of self-efficacy as it relates to academics has been widely researched since Bandura introduced and extensively researched the theory in the seventies. One such study focused on self-efficacy as a predictor of academic performance in science (Andrew, 1998). The study sought to develop a research instrument to measure nursing students' self-efficacy in science courses, and to determine if it would accurately predict the students' academic performance in the science subjects taken during their first year of school. The study, which involved 81 nursing students in Australia in their first year of nursing courses, found that the scale used to measure self-efficacy had predictive validity for academic performance. It also showed that students' background in science courses did not have a significant impact on their self-efficacy, a fact that the researcher calls "surprising" (p. 601). However, Andrews suggests the results were close to being statistically significant, and a larger population size may yield different findings.

In a study on the influence of self-efficacy on cognitive task performance, it was suggested that students' perception of self-efficacy serves as a feasible construct for understanding performance (Bouffard-Bouchard, 2001). A person's judgment of their self-efficacy on a task is a theory that has been developed to account for unwillingness or inability of individuals to execute a task that they have the skills to execute. The study, which involved 64 Canadian college students, investigated the relationship between students' judgments of self-efficacy and their performance on a verbal concept-formation task. The students had similar pre-requisite skills in the task, determined by the researcher using an initial assessment of cognitive skills and performance. By giving a preliminary test on which they received either positive or

negative feedback regardless of whether or not they answered correctly, the researcher induced the students' self-efficacy. Those who received positive feedback were more efficacious than those who received negative feedback. Students' perceived self-efficacy was related to their persistence on the task as well as their ability to evaluate the correctness of their responses. The high self-efficacy group completed considerably more problems than the low-efficacy group. Additionally, 84% of those in the high self-efficacy group had the performance goal of completing all the problems, whereas only 31% in the low self-efficacy group stated this goal. This study shows that perceived self-efficacy could function partially separately from those skills; a person's judgment of their efficacy does not necessarily form entirely from their existing repertoire. It supports the idea that efficacy is influenced from external sources such as social persuasion.

In a study examining the ability of prior academic performance, proxy efficacy (the student's confidence in third parties-i.e. college professors, faculty, etc. to function satisfactorily on their behalf) and academic self-efficacy to predict academic performance of college students, Elias and MacDonald (2007) administered multiple surveys to 202 students enrolled in a large university in the United States. The study found that past performance was predictive of self-efficacy judgments, supporting prior research findings that high school performance is a predictor of college performance. Overall, the study maintained that the findings support the idea that prior academic performance and academic self-efficacy are decidedly significant to future academic performance. While prior academic performance influences students' judgments of efficacy, academic self-efficacy beliefs are often a predictor of college outcomes (Gore, 2006). Results of two incremental validity studies found that self-efficacy of college students changed over the course of their college career, and the predictability that it had on performance also

transformed, becoming much stronger predictor when measured at the end of the students' first semester in college. The results of this research suggest that feedback on performance is needed before students can realistically judge their ability to achieve academic objectives. Additionally, the study suggests that the first semester of college is a vital time to encourage and foster self-efficacy beliefs.

A study by Krista Mattern and Emily Shaw (2010) explored the relationship between academic self-efficacy and other motivational indicators. The sample was 196,364 college level students across the United States. The results indicated differences in self-efficacy in various areas (math ability, writing ability) based on demographics such as race and gender. For example, male students were more likely to judge their efficacy in math higher than female students, yet in writing ability, female students reported higher self-efficacy beliefs; African-American students were more likely to judge their efficacy in math ability as low. The study states that although self-efficacy is strongly linked to academic outcomes, minority students generally tend to hold low self-efficacy beliefs. Similar to identity, many demographic factors such as race, gender, and class level can impact perceptions of self-efficacy. Another issue this study acknowledged was the reluctance of a large percentage of students with low self-efficacy to receive academic help and support. In addition to findings that support that self-efficacy effects performance, other findings show a strong relationship between self-efficacy and personal adjustment (Chemers, Li-tze & Garcia, 2001).

A comprehensive survey developed by Steven Owen and Robert Froman (1988) sought to measure the self-efficacy of college-aged students. The study focused on the development of the scale and estimation of its measurement properties. The scale, named the College Academic Self-Efficacy Scale, was preliminarily found to be a valid and reliable measurement tool. The

findings of the study show validity and reliability of the scale (Owen & Froman, 1988). This scale will be used to measure the academic self-efficacy of the students in the current study.

Self-efficacy theory has also been researched as it pertains to athletic or sport performance. According to Feltz, Short and Sullivan (2002), self-efficacy in sports is often interpreted as confidence, and is an extremely important psychological construct that affects performance and achievement in athletics. Like in academics, self-efficacy in sport can be impacted by a number of factors including past performances, secondhand or observational experiences, and verbal persuasion. The most powerful of these influences is past performance, but verbal persuasion and vicarious influences can be very influential as well, depending on the situation. According to the authors, the power of persuasion depends on the persuader; the more trustworthy and credible they are to the athlete, the more persuasive power they have. Coaches, therefore, are often a trusted source of feedback regarding athletic ability, and thus can be the key to boosting self-efficacy in their athletes. Feedback from coaches that acknowledges individual progress and improvement cultivates self-efficacy. Other sources of persuasion include pregame speeches, self-talk and assigned goals. Vicarious influences, such as comparing oneself to another athlete, can influence self-efficacy as well. Observation and having a model can inform the athlete about the level of difficulty of a task, thus impacting their own self-efficacy. For example, if a less talented athlete is able to complete a certain drill, the athlete observing may have higher self-efficacy for the task after observing this.

Other sources of self-efficacy that are specific to sport, and are referred to as the "Sources of Sport Confidence" are mastery, demonstration of ability, physical and mental preparation, physical self-preparation, social support, coaches' leadership, vicarious experience, environmental comfort and situational favorableness (Feltz, Short & Sullivan, 2002, p. 14). This

indicates that self-efficacy as applied to sport is complex and multifaceted, and influences not only the physical part of the performance, but all aspects such as predicting an opponent's movements or managing pressure. As in other areas, efficacy in sport performance can change over time, and may be repetitive. For instance, the phenomenon of a losing streak may be explained by this idea. In addition, efficacy beliefs are a determining factor in performance only when they perceive the task as important and have the requisite skills to complete the task. The physiological state (i.e. emotional state) of the athlete is also a prominent influence on self-efficacy.

A meta-analysis of studies focusing on the relationship between self-efficacy and athletic performance determined the average correlation between self-efficacy and performance to be .38, a moderately significant correlation (Moritz, Feltz, Fahrbach & Mack, 2000). The study was able to approximate the average correlation of the strength of the relationship between self-efficacy and sport performance. The meta-analysis, examining 45 studies, showed that the range of correlations between self-efficacy and sport performance was wide, spanning from .01 to .79, and even negative correlations in some cases. However, the average correlation proved to remain moderate and supports what alternate research has found about the relationship between self-efficacy and performance: that there is a positive, moderate relationship between the two. It found that about 16% of variance in athletic performance can be ascribed to self-efficacy, a large percentage when bearing in mind the many components that can sway performance. As with academics, self-efficacy impacts sport performance, the activities the individual chooses to partake in, and the effort and persistence that they exemplify for the task.

Similar to identity, certain factors such as gender and level of sport experience can impact the athletic self-efficacy of student-athletes. Shelangoski, Hambrick, Gross and Weber

(2014) developed an athletic self-efficacy measurement tool using a combination of existing self-efficacy scales from a preexisting study examining self-efficacy levels of Ironman student athletes. This study focused on the level of sport-related self-efficacy possessed by male and female college student-athletes, the effect of gender and playing experience on self-efficacy levels in intercollegiate student-athletes, and the effect of gender and class status on self-efficacy levels in intercollegiate student-athletes. The cross-sectional study used quantitative data to examine the relationship between self-efficacy and performance in male and female student athletes across multiple fall sports. The sample size was 78 intercollegiate student athletes participating in a fall sport, and the surveys were administered to the students before a regular practice. The instrument combined three existing self-efficacy scales: the Trait Sport Confidence Inventory, the State Sport Confidence Inventory, and the Competitive State Anxiety Inventory-2. Scale items were selected and reworded based on their relevance to intercollegiate student athletes participating in the different sports addressed. Findings showed that student-athletes had generally high levels of self-efficacy. Gender and playing experience did not affect self-efficacy levels. Gender and Class-status (years playing), however, did have significant relationship to self-efficacy. Results confirmed other studies that showed male student athletes have higher levels of self-efficacy than female student athletes. The level of playing experience of the student-athletes did not show a significant impact on self-efficacy, which is different from previous research. This scale will be used to measure students' athletic self-efficacy in the present study.

Purpose of the Study

Past research has developed scales to measure academic identity, athletic identity, and most recently, both. Prior research has also explored the construct of self-efficacy in both the

academic and athletic realms. The present study aims to determine the reliability and validity of two scales developed in 2014, the Academic Athletic Identity Scale (AAIS; Yukhymenko-Lescroat, 2014), and the Athletic Self-Efficacy Scale (ASES; Shelangoski et.al., 2014). Additionally, the main purpose of the study is to explore the relationship between student-athlete identity and self-efficacy. As prior research has focused on each element individually, what is not clear is the extent to which student-athlete identity is related to feelings of self-efficacy. The study will explore the relationship between student-athlete identity and self-efficacy, and the factors that influence both these constructs.

This study is significant in that it will add to the literature by doing a number of new things: first, it will discuss the reliability and validity of the two scales that were recently designed; second, it will apply the scales and explore a correlation between academic athletic identity and the academic and athletic self-efficacy data collected. This study, through the administration of three surveys measuring student-athlete identity, academic self-efficacy, and athletic self-efficacy, will use quantitative data to explore the relationship between these variables.

Methods

The research questions that will be discussed in the study are:

RQ1: What levels of student-athlete academic identity, athletic identity, academic self-efficacy, and athletic self-efficacy do college students at a large Division I school in the Southeast Conference possess?

RQ2: Is there a relationship between student-athlete identity and athletic and academic self-efficacy?

RQ3: Is academic self-efficacy positively related to academic performance? Is academic or athletic identity related to academic performance?

RQ4: What are some of the factors that influence student-athlete identity and self-efficacy?

RQ5: Which demographics impact correlations between the four measures?

Participants

Participants were a convenience sample of 103 student-athletes competing at a Division I university in the southeastern United States. The sample consisted of 20.6% of the 500 student-athletes enrolled at the university at the time of study. A random convenience sampling technique was used in this study. Surveys were administered to a total of 108 student-athletes, with 5 surveys returned incomplete and excluded from the final sample. All student-athletes who participated were listed on their team's current roster, even if they were not competing due to injury or redshirting. A detailed table of participant demographics and corresponding self-reported and actual GPA and credit hours can be viewed in Table 1. All teams at this university except gymnastics and golf were represented. Of those surveyed, 60.2% were male, 46.6% were Black/African-American, and 45.6% of participants were freshmen. The ages of participants

ranged from 17 to 25, with most falling between the ages of 18 to 21. A majority of participants (57.3%) were participating in an in-season sport at the time fata were collected. The majority (66%) of student-athletes involved indicate that they had been involved in their sport for more than 8 years. Most student-athletes (64.1%) who participated indicated that they spent 15 or more hours participating in their sport while in-season, while most felt they spent less time involved in the sport out of season.

Measures

There were three measures used in the present study. They were the Academic Athletic Identity Scale (AAIS; Yukhymenko-Lescroat, 2014), the College Academic Self Efficacy Scale (CASES; Owen & Froman, 1988), and the Athletic Self-Efficacy Scale (Shelangoski et.al., 2014).

Academic Athletic Identity Scale

The AAIS is an 11-item survey that purports to measure academic and athletic identity. Students are asked to rate each item, which is a characteristic or quality such as "being athletic" on a scale of 1-6, with a 1 indicating that the item is "not central to my sense of self," a 2-3 indicating that the characteristic or quality is "somewhat central to my sense of self," 4-5 indicating that it is "quite central to my sense of self" and 6 indicating that it is "very central to my sense of self." Survey completers are directed to indicate how central to their sense of self each quality is, and to answer "not central to my sense of self" if an item seems good or desirable but is not an important part of whom they are. For this study, scores were totaled for the first five items and reported as academic self-identity. The score total for the last six items was considered representative of a student-athlete's athletic identity. A confirmatory factor analysis supported a two-factor structure of the scale and provided evidence of reliability and validity.

Table 1. Demographic Table Showing Average Self reported and Average Actual GPA/Credit hours by Demographic Category

	N (103)	GPA		Credit Hours	
		Self-Reported	Actual	Self-Reported	Actual
Gender					
Male	62	2.5	2.4	43.3	42.5
Female	41	2.8	2.7	44.9	44.6
Race					
White	45	2.9	2.8	42.2	41.3
Hispanic/Latino	3	2.8	2.6	60	60.7
Black/African American	48	2.5	2.3	44.6	44.7
Native American/Am. Indian	1	2.5	2.0	21	15
Other	6	2.5	2.3	47.8	43.3
Sport					
Track and Field	15	2.7	2.6	47.3	44.7
Basketball	16	2.5	2.4	40.9	41.3
Volleyball	6	2.8	2.9	46.2	46.7
Sand Volleyball	3	3.2	3.1	23.7	26
Softball	7	2.8	2.7	24.4	28.6
Swimming and Diving	6	2.9	2.8	63.2	61.3
Football	34	2.5	2.2	44.3	42.5
Baseball	7	2.6	2.6	41.1	38.9
Tennis	4	3.1	3.0	59.3	57.5
Cross Country	3	3.5	3.5	40	43.7
Year in School					
Freshman	47	2.6	2.4	17.6	18.1
Sophomore	28	2.8	2.7	46.7	47.5
Junior	15	2.7	2.6	76.3	76.5
Senior	12	2.7	2.5	93.6	88.7
More than 4	1	2.5	2.5	120	69

Furthermore, standardized factor loadings were significant for all 11 items and in the range of .77 to .93 for academic identity and .75 to .89 for athletic identity. The omega coefficients for both academic and athletic identity were .93, indicating an overall good model fit and adequate reliability.

Due to the lack of use of this newly developed scale, the researcher deemed it appropriate to confirm the reliability and validity of the scale. The scale was reliable (see table 2). Findings from the factor analysis were consistent with the factor analysis completed in the original study, and confirm the belief that the AAIS measures both academic and athletic identity. To test the construct validity of the Academic Athletic Identity Scale, a confirmatory factor analysis was conducted in which principle components analysis occurred. Visual inspection of the scree plot and the eigenvalue >1 rule were used to determine the number of components in existence. Similar to the original factor analysis conducted by Yukhymenko–Lescroart, principal components analysis revealed two factors that accounted for 75.7% of the total variance. The first factor (Academic Identity) accounted for 50.2% of the variance. The second factor (Athletic Identity) explained 25.5% of the variance. Estimates of internal consistency for the AAIS were calculated using Cronbach's α values for academic identity and athletic identity statements were .920 and .927, respectively.

College Academic Self-Efficacy Scale

For CASES, participants were asked to rate each of 33 items on a 5-point Likert Scale (from very little confidence to quite a lot) based on the importance of the behavior to academic success. The reliability of the CASES was tested by test-retest reliability twice over an eight-week period. Alpha internal consistency estimates were .90 and .92, and the stability estimate was .85. To test the validity of the CASES, concurrent validity studies found that self-efficacy

showed strong incremental validity beyond that explained by GPA. Furthermore, an exploratory factor analysis was performed, resulting in three clear structures with eigenvalues above 1.0 explaining 78% of the systematic variance emerged: Overt, Social Situations (i.e. Participating in class discussion), Cognitive Operations (ie. Listening carefully during a lecture) and Technical Skills (i.e. Using a computer). The study proved the developed scale to be both a valid and reliable measure of collegiate academic self-efficacy. CASES provided this study with a rapid and straightforward tool for assessing academic self-efficacy.

Athletic Self-Efficacy Scale

The 15-item Athletic Self Efficacy Scale asks completers to rate their degree of confidence in different athletic tasks on a scale of 0-100, with 0 indicating "cannot do at all" and 100 indicating "highly certain can do." The reliability of the scale was tested using internal consistency reliability. The scale measured 4 types of self-efficacy, and reliability for each was calculated: General Self-Efficacy (α=. 868), State Self-Efficacy (α=.897), Trait Self-Efficacy (α=.912), and Overall Self-Efficacy (α=.950). The results indicated a high level of internal consistency reliability for the instrument.

As the scale is newly developed, the researcher completed reliability analysis and a confirmatory factor analysis of the newly developed Athletic Self-Efficacy scale in order to explore its construct validity. The scale was reliable (see Table 2). The scale purports to measure three constructs of self-efficacy: General Self-Efficacy (basic descriptive values of the perception of their own ability), State Self-Efficacy (situational), and Trait Self-Efficacy (individual ability). To test the construct validity of the scale, a confirmatory factor analysis was conducted in which principle components analysis occurred. Visual inspection of the scree plot and the eigenvalue >1 rule were used to determine the number of components in existence.

Principal components analysis revealed only two factors that accounted for 67% of the total variance. The first factor accounted for 56.5% of the variance. The second factor accounted for 10.6% of the variance. In order to better understand which types of self-efficacy were being measured, analysis of the component matrix was conducted. All 15 items were highly correlated with component 1, indicating that one of the constructs was overall self-efficacy. However, items 1-5 showed significant correlation to component 2. Items 1-5 were designed to measure General Self-Efficacy. All remaining items (10-15) had very low or negative correlation to this construct. The correlation matrix revealed generally moderate to high correlation between all items. Since the current research is seeking an overall self-efficacy score and is not concerned with the three distinct types of self-efficacy, the scale was used to determine overall self-efficacy of student-athletes.

Table 2. Reliability of the Academic Athletic Identity Scale and the Athletic Self-Efficacy Scale

Scale	Cronbach's α
Academic Athletic Identity Scale n=11	.894
Athletic Self-Efficacy Scale n=15	.941

Procedure

Survey administration occurred during a two week time period, in February 2015 in the student-athlete academic building on the campus of a large public university. Students were asked individually and in groups to participate in the survey. They were approached by the researcher based on their presence in the academic center during the school day, when they were in the building to spend time between classes, attending a tutoring appointment, meeting with an advisor or completing required study hall hours. The researcher also attended multiple study hall

sessions at night, during which groups of 10-20 students were asked to participate at the same time. The researcher briefly explained the purpose of the study and asked if the students would be willing o take the surveys. Approximately 140 student-athletes were asked to complete the survey, and about 30 either opted out of participating or did not have time to complete it. Thus the study employed random convenience sampling. The letter of consent provided to each participant clearly described the nature and purpose of the study as well as detailed the rights of the participant. Students were given both oral and written directions on how to complete the survey, and the researcher was present at the time the students were completing the surveys in case questions or concerns arose that required attention. Students were given an unlimited amount of time to complete the survey, and in most cases completion took between 5-12 minutes to complete it. In the majority of the cases, surveys were administered in a quiet setting with few distractions. Upon collection of the surveys, data was entered into IBM SPSS Statistics version 22 for examination and statistical computation. While all student responses on all three measures were entered separately, a final data set was created reflecting the total scores all participants on each survey, as well as demographic data.

Interscorer Reliability

In order to measure the reliability of the scores calculated, interscorer reliability was completed using 30 survey sets chosen randomly by the primary researcher. The second scorer was shown how to score each of the three measures, including determining four separate scores. Once the scorer demonstrated the ability to accurately score two sets of surveys with 100% agreement with the researcher, then that person was provided with the 30 survey sets to score. The 30 surveys accounted for approximately 29% of the sample. There was 98% agreement between the mean scores of the 30 participants.

Analysis Plan

In order to complete a confirmatory analysis on the reliability and validity of the Academic Athletic Identity Scale and the Athletic Self-Efficacy Scale, technical adequacy data will be collected. In order to explore correlations and complete the quantitative analysis of the data, descriptive statistics as well as bivariate correlational analysis and analysis of variance (ANOVA) were utilized.

RQ1: What levels of student-athlete academic identity, athletic identity, academic self-efficacy, and athletic self-efficacy do college students at a large Division I school in the Southeast Conference possess? This question was analyzed through descriptive statistics (mean, range, standard deviation) of each of the 4 scales. The independent variable in this case was the student athletes, and the dependent variables were the levels of identity and self-efficacy.

RQ2: Is there a relationship between student-athlete identity and athletic and academic self-efficacy? This question was analyzed through correlational analysis of the four different scales derived from the three surveys. A correlational matrix showing the relationship between these measures was created reflecting the correlation coefficient, a measure of the linear association between variables.

RQ3: Is academic self-efficacy positively related to academic performance? Is identity related to performance? This question was addressed using a simple bivariate correlation between current GPA and the score on the academic self-efficacy and identity measures to determine a potential relationship between academic performance and either academic self-efficacy or identity.

RQ4: What are some of the factors that influence student-athlete identity and self-efficacy? The researcher used separate ANOVAs to analyze the relationship of various

demographic (independent) variables to each of the dependent variables (Academic ID, Athletic ID, Academic Self-efficacy, Athletic Self-efficacy). The ANOVA compared the demographic groups to determine if a statistically significant difference existed in the DV by the grouping variables.

RQ5: Which demographics impact correlations between the four measures? This was calculated by selecting cases based on demographic and running a correlational analysis for each group.

Research Design

The researcher used a quantitative research methodology. In order to explore the research questions posed, the researcher used a descriptive, cross-sectional, correlational analysis of four separate sets of data collected using three different surveys. Administration of each survey was done in-person by the researcher, and each student was asked to participate voluntarily, made aware of the purpose of the study, and provided written consent after review of the letter of consent. No time limit was imposed for completing the survey, but the researcher explained that they should take 7-10 minutes to complete. The questionnaires were collected immediately after completion. As student-athlete identity has not yet been compared to student-athlete self-efficacy, this is the first study of its kind to explore a potential relationship between student-athlete identity and self-efficacy.

Results

Data Analysis

Descriptive statistics for the four subscales were calculated. The mean, standard error, range, minimum and maximum, and standard deviation were all calculated and are reflected in Table 4.

The scores for the Academic Athletic Identity subscales are interpreted according to the highest and lowest possible scores on each subscale. The lowest that a student could have scored on the academic portion was 5, while the highest possible score was a 30. The lowest possible score on the athletic subscale was a 6, and the highest was a 36. The mean score on the academic portion for the participants in this study was 23.8 (*SE = 4.85*), and scores range from a low of 9 to a high of 30. On the athletic portion, the mean score was 32.6 (*SE = 4.5*), with scores ranging from 16 to 36. This indicates that student-athletes surveyed in this study had a relatively high academic and athletic identity, yet scored lower on average on the academic identity subscale. Calculated in percentages, the average score on the academic identity subscale was 79.3% and the average on the athletic identity subscale was 90.6%.

The average score on the College Self-Efficacy scale was a 3.38 (*SE= .49*) and scores ranged from 2.03 to 4.55 (on a 1-5 scale). On average, students felt "somewhat confident" on most of the academic items. The mean score averaging across items was recommended by the researcher who developed the scale as the best way to interpret the scores, as it puts the overall score in the same metric as the original response scale (1-5). The researcher who developed the CASES also provided a summary of data from their CASES file, in which a sample of students from a large university in the Northeast across a 5-year period is represented. The mean score of their sample, comprised of 3,149 students, was 2.8 with scores ranging from a low of 1.19 to a

high of 4.91. This indicates that the student-athletes in the current study scored higher, on average, than the population tested by Owen and Froman (1988).

The average score in the current study on the Athletic Self-Efficacy Scale was 87.5 (*SD = 11*; scale of 0-100). In order to quantify this number, the researcher compared it to the average athletic self-efficacy score found for student athletes in the original study. Shelangoski et. al. (2014) surveyed 78 student-athletes competing in fall sports at the Division I level at a large Midwestern university and found the average score to be 84, which is slightly below the current study's average. Student-athletes in the present study indicated that they felt slightly more confident, on average, than those students involved in the preliminary study.

Table 3. Descriptive Statistics Showing the Mean, Range, and Standard Deviation of all Scales

	N	Total Score	Mean Item Score	Standard Deviation	Minimum	Maximum
Academic Identity Subscale	103	23.84 (out of 30)	4.76 (on a scale of 1-6)	4.85	9	30
Athletic Identity Subscale	103	32.60 (out of 36)	5.43 (on a scale of 1-6)	4.50	16	36
College Academic Self-Efficacy Scale	103	3.38 (out of 5)	3.38 (on a scale of 1-5)	0.49	2.03	4.55
Athletic Self-Efficacy Scale	103	87.57 (out of 100)	87.57 (on a scale of 0-100)	11.00	50	100

In order to explore any correlations between the scales, a bivariate correlational analysis was run. Table 6 reflects the findings from this calculation. There was a significant positive correlation between academic identity and academic self-efficacy, r=.268, p<.01. Furthermore,

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there was a slight correlation of .209 (p<.05) between athletic identity and athletic self-efficacy. There was a moderate positive correlation of .318 between the academic identity and athletic identity scores.

In order to explore the relationship between academic performance (GPA) and academic self-efficacy, a correlational analysis was completed. The correlation between academic performance and academic self-efficacy was, .262, which was statistically significant at the p<.01 level. To investigate a relationship between academic performance and academic identity, a correlational analysis was completed. The correlation between academic performance, measured by GPA, and academic identity was a .198, which was significant at the p<.05 level. The correlation between athletic identity and academic performance was negative, although not significant, at -.022.

Table 4. Correlation between the Four Scales

Measure	1. Academic Identity Subscale	2. Athletic Identity Subscale	3. College Academic Self-Efficacy Scale
2. Athletic Identity Subscale	r=.318** CI [.133, .482] n=103	___	
3. College Academic Self-Efficacy Scale	r=.268** CI [.079, .439] n=103	r=-.174 CI [-.356, .020] n=103	___
4. Athletic Self-Efficacy Scale	r=.188 CI [-.006, .368] n=103	r=.209* CI [.016, .387] n=103	r=.077 CI [-.118, .267] n=103

Note. **. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Additionally, to examine how the major demographic areas related to how participants scored on the scales, multiple ANOVAs were completed comparing race, gender, and year in school to the outcomes of each of the four measures. For the purposes of this section of data

analysis, race was recoded into "white", "black" and "other" since those categories other than white and black had numbers that were too small to analyze unless grouped. The variable Year in School was modified to one, two, three and four or more, as only one student had five years of school.

A mixed design ANOVA with Gender, Race, and Year in School as between-subjects factors and Academic Identity score as the dependent variable suggested no significant main effects for Gender, $F(1, 80) = 2.98$, p = .088, or for Years in School $F(3, 80) = 1.09$, $p = .355$. There were marginally significant differences in Race, $F(2, 80) = 3.20$, $p = .046$, so a post hoc Least Significant Difference (LSD) test was conducted to further investigate this. The findings indicate that the White and Other groups differed significantly at $p = .013$; the Black and Other groups also differed significantly at $p = .011$. There was no significant difference between the White and Black groups. The assumption of homogeneity of variance was violated, as indicated by the Levene's test.

A mixed design ANOVA with Gender, Race, and Year in School as between-subjects factors and Athletic Identity score as the dependent variable revealed no significant main effects for Gender, $F(1, 80) = 1.72$, p = .194, Race, $F(2, 80) = 1.47$, p = .236. (or for Years in School $F(3, 80) = .633$, p = .596. Furthermore there were no significant interactions between variables. By conducting a Levene's Test of Equality of Error Variances, it was determined that $p = .004$. This indicates that the assumption of equal variances was not met for this scale.

Another mixed design ANOVA with Gender, Race, and Year in School as between-subjects factors and Academic Self-Efficacy score as the dependent variable revealed no significant main effects for Gender, $F(1, 80) = 2.05$, $p = .157$, Race, $F(2, 80) = 518$, $p = .597$., or for Years in School $F(3, 80) = 1.06$, $p = .373$. However, the interaction between race and years in

school was marginally significant ($p = .049$) indicating that there is a difference in means on the dependent variable for race, dependent on one's year in school (and vice versa), on years in school, dependent on one's race. A post hoc LSD test was conducted to further investigate this. The finding showed that the largest difference in mean score was between Freshman and Sophomore year, $p = .010$. By conducting a Levene's Test of Equality of Error Variances, it was determined that $p = .169$. This indicates that the assumption of equal variances was met for this scale.

The last ANOVA used Gender, Race, and Year in School as between-subjects factors and Athletic Identity score as the dependent variable; it revealed no significant main effects for Gender, $F(1, 80) = 2.39$, $p = .126$, Race, $F(2, 80) = .685$, $p = .507$, or for Years in School $F(3, 80) = .355$, $p = .786$. Furthermore, there were no significant interactions between variables. By conducting a Levene's Test of Equality of Error Variances, it was determined that $p = .109$, indicating that the assumption of equal variances was met for this scale.

In order to further explore how demographic factors influenced correlations between scales, bivariate correlational analysis was run for each group. Findings are shown in Table 5. The data indicated several statistically significant results at the $p < .01$ and $p < .05$ levels.

Table 5
Correlations according to Demographic Group

	Correlation between Academic ID and Athletic ID		Correlation between Academic ID and Academic SE		Correlation between Academic ID and Athletic SE		Correlation between Athletic ID and Academic SE		Correlation between Athletic ID and Athletic SE		Correlation between Academic SE and Athletic SE	
	Pearson r	95% CI	Pearson r	95% CI	Pearson r	95% CI	Pearson r	95% CI	Pearson r	95% CI	Pearson r	95% CI
Gender												
Male n=62	.204	-.048, .043	.322*	.079, .053	.255*	.006, .475	-.202	-.043, .050	.340**	.099, .544	.100	-.154, .341
Female n=41	.513**	.244, .709	.064	-.249, .364	.271	-.040, .534	-.171	-.455, .144	.022	-.288, .327	.156	-.255, .442
Race												
White n=45	.063	-.235, .350	.418**	.142, .634	.034	-.262, .324	-.350*	-.584, -.063	.158	-.142, .432	.056	-.242, .344
Black/African American n=48	.284	.000, .526	.262	-.024, .508	.359*	.083, .584	-.053	-.332, .235	.420**	.154, .629	.087	-.202, .362
All Other n=10	.856**	.491, .965	-.435	-.836, .268	-.064	-.667, .589	-.367	-.810, .342	-.367	-.810, .342	.307	-.400, .785
Sport												
Track and Field n=15	.815**	.520, .936	-.254	-.678, .297	.310	-.240, .710	-.511	-.811, .002	.335	-.214, .723	.002	-.511, .514
Basketball n=16	-.268	-.674, .263	.192	-.336, .628	.291	-.239, .688	-.069	-546, .442	.418	-.098, .757	.278	-.253, .680
Volleyball/ Sand Volleyball n=9	-.223	-.773, .518	.499	-.247, .874	.704*	.075, .932	-.427	-.85, .331	-.534	-.884, .202	.635	-.050, .914
Softball & Soccer n=9	.150	-.571, .740	.026	-.649, .678	.113	-.596, .723	-.117	-.725, .593	.021	-.652, .676	-.470	-.864, .282

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Table 5 Continued

	Correlation between Academic ID and Athletic ID		Correlation between Academic ID and Academic SE		Correlation between Academic ID and Athletic SE		Correlation between Athletic ID and Academic SE		Correlation between Athletic ID and Athletic SE		Correlation between Academic SE and Athletic SE	
	Pearson r	95% CI	Pearson r	95% CI	Pearson r	95% CI	Pearson r	95% CI	Pearson r	95% CI	Pearson r	95% CI
Football n=34	.237	-.110, .532	.475**	.163, .701	.253	-.093, .545	-.129	-.448, .219	.367*	.033, .627	.018	-.322, .354
Baseball n=7	.214	-.643, .833	-.073	-.783, .720	-.060	-.778, .726	-.423	-.892, .484	-.056	0.776, .728	.237	-.268, .840
Tennis & Cross Country, Swimming & Diving n=13	-.001	-.552, .550	.310	-.291, .735	.193	-.401, .672	-.098	-.616, .479	.217	-.379, .686	.415	-.176, .786
Year in School												
Freshman n=47	.339*	.057, .571	.289*	.002, .532	.150	-.143, .419	-.181	-.445, .112	.129	-.164, .401	.089	-.203, .367
Sophomore n=28	.323	-.057, .621	.324	-.056, .622	.225	-.162, .552	-.228	-.554, .159	.471*	.119, .718	.095	-.288, .452
Junior n=15	.243	-.308, .672	.265	-.286, .684	.439	-.107, .772	-.259	-.681, .292	.195	-.352, .643	-.057	-.553, .469
Senior & Year 5 n=13	.314	-.287, .737	.481	-.095, .816	.204	-.391, .679	-.131	-.636, .453	.107	-.472, .621	-.106	-.621, .472

Note. **. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Discussion of Findings

Discussion

RQ1: What levels of student-athlete academic identity, athletic identity, academic self-efficacy, and athletic self-efficacy do college students at a large Division I school in the Southeast Conference possess?

Descriptive statistics were used to explore the different levels of academic identity, athletic identity, academic self-efficacy and athletic self-efficacy that the student-athletes participating in the study had. Findings revealed that student athletes generally had strong academic and athletic identity levels. The mean academic identity score was a 23.84 out of a potential 30. The mean athletic score was even higher, at 32.60 out of a possible 36. Since this scale was newly developed, the current researcher did not have other results to compare the means to, but it is evident by the high means on both scales that on average, students athletes at this Division I institution tended to identify strongly with both roles. This is an important finding, as other studies have reinforced the idea that students-athletes who identify strongly with one role have significantly weaker identification with the other role (Sturm et.al., 2011; Brewer, et.al. 1993). The current study did not support this hypothesis that there is a significant negative correlation between athlete identity and student identity. Instead, this current research poses the opposite, showing a slightly moderate positive correlation of .318 between Academic Identity and Athletic Identity, and indicating that most students who participated in this study embraced the dual role of the student-athlete.

However, it is important to note that although both the academic and athletic identities of the participants tended to be high, looking at the percentages reveals that students identified

78.9% as students and 90.5% as athletes, showing that generally, athletic identity of the participants trumped their academic identity, even if it was marginally.

Additionally, the students had relatively high levels of academic self-efficacy. The mean score on the College Academic Self-Efficacy scale was 3.38 out of 5. This indicates that student-athletes generally showed moderate confidence on the academic items represented on the scale. The developer of the CASES (Owen, Froman, 1988) provided the current researcher with a summary of data in order to provide a sense of how undergraduate students attending a large Northeastern university scored across a 5-year period. The mean score for this sample was 2.80 out of 5. A comparison of student-athletes in the current study to students in the original study reveal that the academic self-efficacy of the participants in the current study is higher than an average undergraduate student attending school in the Northeast.

Likewise, student-athletes displayed high levels of athletic self-efficacy. The average score on the Athletic Self-Efficacy Scale was 87.57 out of 100. The original study that developed the Athletic Self-Efficacy (Shelangoski et.al., 2014) found the average score for a Division I collegiate student-athlete at a large Midwestern university was an 84 out of 100. Thus the average in the current study is slightly higher, and confirms the findings of Shelangoski et.al. that student-athletes have generally high levels of self-efficacy.

RQ2: Is there a relationship between student-athlete identity and athletic and academic self-efficacy?

By conducting a bivariate correlational analysis to generate a correlation matrix between the four scales, a significant positive correlation of .268 (p>.01) was found between academic identity and academic self-efficacy, indicating that students who identified strongly as a student tended to have higher self-efficacy beliefs in their academic abilities. Furthermore, there was a

slight correlation of .209 (p>.05) between athletic identity and athletic self-efficacy, indicating a relationship between students who strongly identified with the athlete role and students who had strong self-efficacy beliefs in their athletic abilities. From this data, it can be suggested that there is a positive relationship between identity and self-efficacy beliefs. This does not indicate, however, that higher levels of self-efficacy in either area cause higher identification with that role, and vice versa. It does, however, provide reason to believe that self-efficacy feelings of student-athletes may contribute to the way that they identify and what role(s) they embrace as a student-athlete.

RQ3: Is self-efficacy positively related to academic performance? Is identity related to academic performance?

While conducting a review of the literature, it was discovered that there are previous studies indicating the significant positive relationship between self-efficacy and performance (Andrew, 1998; Chemers et.al., 2001; Moritz et.al., 2000). The current findings support this point. This study found that there was a significant positive correlation of .202 between academic self-efficacy and GPA. As the study did not include a measure of athletic performance, it was unable to explore a correlation between athletic identity or athletic self-efficacy and athletic performance. This finding that high self-efficacy in academics is positively related to academic performance is important for a number of reasons.

Identity also had a significant impact on performance, with academic identity correlating to academic performance at .198, which was significant at the p<.05 level. One study that was discussed in the review of the literature (Bimper, 2014) discovered that students displaying higher levels of athletic identity tended to have lower GPAs. This was not the case in the current study. There was no significant relationship between GPA and athletic identity.

RQ4: What are some of the factors that influence student-athlete identity and self-efficacy?

Multiple ANOVAs were conducted to explore the influence of various demographics on student-athlete academic identity, athletic identity, academic self-efficacy and athletic self-efficacy. On the first ANOVA, Gender, Race and Year in School were the factors and the score on the Academic Identity subscale was the dependent variable. Findings of this analysis indicate that the White and Other groups differed significantly at $p = .013$; the Black and Other groups also differed significantly at $p = .011$. There was no significant difference between the White and Black groups. Years In School also resulted in no significant differences.

In the second ANOVA, the same demographic factors were used with the Athletic Identity subscale score as the dependent variable. Findings revealed no significant main effects of interactions.

In the third ANOVA, factors remained the same and the dependent variable was Academic Self-Efficacy. The results revealed no significant main effects for Gender, Race, or Year in School. There was a marginally significant interaction between Race and Year in School, indicating that there is a difference in means on the dependent variable for race, dependent on one's year in school (and vice versa), on years in school, dependent on one's race. The largest difference in mean score was between freshman and sophomore year.

The last ANOVA run used Athletic Self-Efficacy as the dependent variable. It revealed no main effects for Gender, Race or Years in School. It revealed no significant interactions.

Findings from these ANOVAs provide insight to which groups and combinations of groups of students differ in their feelings of identity and self-efficacy. Although few significant main effects and interactions emerged from the analysis, important information can still be gleaned from this analysis. Firstly, it is evident from the first ANOVA that the "other" group of

races that was a combination of three Hispanic students, one Native American student and six students who self-identified as "other" have significant differences in Academic Identity compared to students who identified as White or Black/African American. Additionally, the third ANOVA revealed that there is a difference in means on the dependent variable for race, dependent on one's year in school (and vice versa), on years in school, dependent on one's race; further analysis revealed that this difference in mean was between freshman and sophomore year. Thus, freshman and sophomore year is a pivotal time for some student-athletes, depending on their race, in regards to their feelings of Academic Self-Efficacy.

RQ5: Which demographics impact correlations between the four measures?

Multiple bivariate correlational analyses between demographic groups and each scale were run in order to explore any significant impacts of demographic groups on the correlations between each scale. Findings showed a number of significant correlations at the $p<.01$ and $p<.05$ levels. Particularly, gender showed that it had an effect on the strength of correlation between scales. Males showed significant correlation between academic identity and academic self-efficacy of .322, athletic identity and athletic self-efficacy of .255, and academic identity and athletic self-efficacy of .340. Female participants showed a significant correlation between academic identity and athletic identity of .513. White participants showed a significant positive correlation between academic identity and academic self-efficacy of .418, and a significant negative correlation between athletic identity and academic self-efficacy of -.350. African American student-athletes, on the other hand, showed a strong positive correlation of .359 between academic identity and athletic self-efficacy. They also showed a strong correlation of .420 between athletic identity and athletic self-efficacy. Those students who identified as "Other"

indicating they did not identify as "White" or "Black/African American," showed a significant positive correlation of .855 between their academic identity and athletic identity.

There were differences in correlation strength and direction based on sport, most notably Track and Field participants showing very strong correlation of .815 between academic identity and athletic identity; Football player displayed a strong correlation between academic identity and academic self-efficacy of .475 and a correlation of .367 between athletic identity and athletic self-efficacy. Volleyball participants showed a strong correlation between academic identity and athletic self-efficacy of .704. When considering participants' grade level, freshmen exhibited strong correlations between academic identity and athletic identity of .339, as well as academic identity and academic self-efficacy of .289. Sophomores showed a strong correlation between athletic identity and athletic self-efficacy of .471.

Implications

The findings of the current study serve to expand and contribute to a body of literature exploring student-athlete identity and self-efficacy. This study both adds information about the relationship between student-athlete identity and self-efficacy as well as supports and disputes claims made by previous research in these areas.

RQ1: What levels of student-athlete academic identity, athletic identity, academic self-efficacy, and athletic self-efficacy do college students at a large Division I school in the Southeast Conference possess?

The finding that the student-athletes in the current study possess high levels of academic and athletic identity could be due to a number of reasons. Previous studies have indicated that student-athletes perceive themselves in accordance with the expectations of significant others (Marx et.al. 2008). Thus, a potential reason for the high academic and athletic identity of the

student-athletes is the nature of the school that they attend. As it is a Division I university, there is a heavy focus on sports and a large fan base; students at a school with a prominent athletic program and a heavy focus on athletics may be more likely to identify strongly with their athletic role, especially with expectations from coaches, teammates, family and other significant people in their lives to excel as a collegiate athlete. Moreover, the school has multiple programs designed to foster the academic growth of their student-athletes, including a large academic support program that provides required study hall, tutoring and academic advising. Academic advising staff are directly involved in student-athletes' day-to-day academic lives. Thus, there may also be also a high level of expectation coming from significant others such as advisors, coaches, and parents to assume the role of the student in order to fulfill the obligations of a student-athlete and remain eligible as a college athlete. The strong dual identities of the student-athletes at this institution may be attributed in part to the dual emphasis academics and athletics strong.

Existing research on the identity of student-athletes indicates that their student-athlete identity is important beyond the college experience. A study on athletic identity affirmed that students with higher athletic identity have higher self-efficacy levels when it comes to career-decision-making and are more optimistic about the future (Cabrita, Rosado, Leite, Serpa & Sousa, 2014). This suggests that a high athletic identity can be beneficial to a student-athlete in terms of career planning. On the other hand, research on career planning, athletic identity, and student role identity by Lally & Kerr (2013) the identity of the student-athlete impacts their career decision-making and life after college, but also has the potential to change and evolve over the course of the student-athlete's college career. Although the current research did not find significant differences in one's identity contingent upon their year in school, the study by Lally

and Kerr is nonetheless important to consider the impact that identity can have on student-athlete success post-college.

Additionally, collegiate level athletes are faced with retiring at some point, thus having to redefine their identity, a difficult task for those elite athletes who mostly or solely identify with the athlete role. A study focusing on the identity of former African-American athletes who had exclusively athletic identities showed that this negatively affected their transition out of athletics as they grappled to reinvent themselves and redefine their identities (Beamon, 2012). The study centered on the theoretical framework of identity foreclosure, which is when someone commits to an identity before he/she has explored other options or considered alternate possibilities. In the case of student-athletes, the pressure to "make it" as an athlete comes from multiple sources, and the amount of time that student-athletes dedicate to sports results in the athletic being superior to other roles and identities. The study argues that those individuals who face identity foreclose will likely encounter difficulty as they face retirement from athletics. Beamon presents a strong case for the importance of encouraging the student-athlete to embrace the student aspect of their identity to alleviate potential identity crises upon retirement from athletics. Other studies (Potuto & O'Hanlan 2007) concur that factors such as the amount of time dedicated to athletics and the sense of security in this role can result in detachment from other roles (like that of the student). Bimper (2014) noted that by engaging in and embracing the student role, the athlete role does not have to be harmed or undervalued. Thus, the importance of establishing high levels of academic identity, while retaining the athletic identity that allows them to be a capable and successful athlete, is important for their future wellbeing.

In addition to high levels of academic and athletic identity, the student-athletes in the current study displayed high levels of academic self-efficacy and athletic self-efficacy. While

there is little existing research in student-athlete academic self-efficacy, the finding that student-athletes possess high athletic self-efficacy corresponded with findings from previous studies of student-athlete athletic self-efficacy (Shelangoski et.al., 2014). Self-efficacy may be key to addressing academic perspectives and strengthening the identity of the student part of the student-athlete equation, to best prepare these students for life beyond their playing time. The idea that self-efficacy is context-dependent is vital to understanding how to work with students to increase their self-efficacy in certain tasks. Coaches and academic staff could use their student-athletes self-efficacy feelings to determine what areas need intervention, and what identity role needs to be strengthened. Previous research has found that prior performance is predictive of self-efficacy judgments, which in turn effects future performance (Elias & MacDonald, 2007). By understanding this impact of prior performance on self-efficacy, those working with student-athletes can better understand their student-athletes and foster self-efficacy in areas in which they are deficit.

    RQ2: Is there a relationship between student-athlete identity and athletic and academic self-efficacy?

    The significant correlations found between academic identity and academic self-efficacy as well as between athletic identity and athletic self-efficacy suggest an important finding that there is, albeit slight, a positive relationship between one's self-efficacy in a given area and how strongly they identify with that area. Results of the study suggest that, though minor, there is a statistically significant positive correlation between student-athletes feelings of self-efficacy and their perceptions of identity. Those who felt efficacious in academic areas tended to have a high academic identity, and vice versa; those with high identity felt efficacious in academic areas. Similarly, those who felt efficacious in athletic areas generally had high athletic identity; those

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with high athletic identity generally felt efficacious in athletic tasks. This relationship between student-athlete identity and self-efficacy certainly warrants additional research to confirm such a connection.

Potential implications for this relationship are vast. By testing student-athletes' self-efficacy in the academic and athletic areas, it may be possible to identify students with deficits or limited background in either area and develop strategies and interventions to assist student-athletes in these areas, simultaneously bolstering their self-efficacy and identity in each area. It is suggested that this promotion and maintenance of self-efficacy start as early as pre-school and continue on throughout a student's engagement in the area (Chemers, Li-tze & Garcia, 2001). Eventually, pending more research in this area, it may benefit college athletic programs to include a self-efficacy screening for incoming student-athletes to gauge their feelings of efficacy on academic and athletic tasks, which would help indicate which students may be in need of academic or athletic intervention.

RQ3: Is self-efficacy positively related to academic performance? Is identity related to academic performance?

The current study confirmed previous research claiming that self-efficacy is a predictor of performance, both in academics (Andrew, 1998; Bouffard-Brouchard, 2001; Mattern & Shaw, 2010; Schunk et.al, 2014) and athletics (Feltz et.al., 2002; Moritz et.al., 2000; Schunk et.al, 2014). This finding should encourage those working with student-athletes to be aware of their self-efficacy beliefs. In order to improve performance in the academic and athletic areas, the beliefs held by student-athletes regarding their own abilities could possibly be influenced by coaches, academic advisors, peers, parents, and others working with the student. By giving students feedback on their work, they can realistically assess their abilities, and by inducing

higher levels of efficacy using persuasion such as positive feedback, educators and coaches can encourage higher levels of self-efficacy in students, which then may positively impact performance. The finding that student-athlete identity is also related to performance is a further reason to encourage the dual identity of the student-athlete and use design and implement evidence-based interventions to work with this unique population of students.

RQ4: What are some of the factors that influence student-athlete identity and self-efficacy?

Although the findings of the ANOVAs were not as substantial as were hypothesized, some important interactions were still revealed. Firstly, when discussing academic identity, it was found that the White and Other groups differed significantly as well as the Black/African American and Other groups. This points to a difference in the mean scores of academic identity between students identifying as White or Black/African American and those who identify as Hispanic, Native American, Asian/Pacific Islander or Other. This difference warrants further investigation and consideration. There were no significant differences on the mean athletic identity score between the various groups. Previous research claiming that African American males tended to overemphasize the athletic identity (Beamon, 2012) was not supported by this study.

Additionally, there was a difference in means on the academic self-efficacy scores based on one's race and year in school. It was determined that there was a significant difference between Freshman and Sophomore years. This is an important finding as it indicates that for a certain group, there is a difference in means on the dependent variable for race, dependent on one's year in school (and vice versa), on years in school, dependent on one's race. Again, this

finding suggests the need for further investigation into the effects or race on academic self-efficacy.

        RQ5: Which demographics impact correlations between the four measures?

        The findings of this study indicated that there were a few demographic groups that had significant correlations between scales. By exploring these areas, it is evident that correlations differed based on gender, race and sport. Not only do the differing correlations give insight into the diversity of the sample, but it also shows that for some groups, results were stronger. For instance, for the Football players who participated in the study, the correlations between academic identity and academic self-efficacy as well as between athletic identity and athletic self-efficacy were strongest, whereas there was no significant correlation between these constructs for track and field students.

Limitations and Future Research

        The study had several limitations and multiple areas for possible future research. First, data were collected at one university, making the sample not as inclusive as it could be. Inclusion of a more diverse sample by using student-athletes from various schools may have resulted in different findings. Furthermore, students were administered surveys in their academic services building, which could have resulted in reactivity to their surroundings. Results may have differed if the survey was administered by a neutral, non-academic party and in a neutral non-academic setting. Another limitation was the method of self-reporting that was used in the study. The study was comprised of three scales, all which were self-report measures. This could have caused response bias and effected the internal validity of the study. Furthermore, students were only given the survey once, but feelings of identity and self-efficacy are subject to change over time and depending on context.

Future research could address these limitations and seek to substantiate the results of this study. Future studies could seek to confirm the positive relationship between academic identity and academic self-efficacy and/or athletic identity and athletic self-efficacy among student-athletes. It would be beneficial to explore this relationship with a different group of student-athletes at a different university in order to compare the relationship between the identity and self-efficacy of student-athletes elsewhere. Additionally, more research regarding the demographic factors that impact the identity and self-efficacy of student-athletes is needed. Studies that included an element of qualitative research may help establish the validity of the results and help account for changes in identity and self-efficacy given the time of year and if the student is in or out of season. Furthermore, the question of if high self-efficacy encourages the dual identity that student-athletes are expected to have and in turn increase their success and opportunities both as an athlete, and as a student is a question that is worthy of more research.

Conclusion

This study expands on an important line of research regarding student-athlete identity and self-efficacy. Prior research has focused on each construct as they relate to student-athletes individually, but this is the first study that has sought to explore a connection between a student-athlete's identity and their feelings of self-efficacy. This research began by confirming the factorial validity and reliability of two of the three scales used in the research to give a firm foundation for its findings. The research confirmed that each newly developed scale was reliable. The AAIS revealed a two-factor construct, solidifying that both academic and athletic identity were being measured. Furthermore, the Athletic Self-Efficacy scale revealed a two-factor construct, with all items relating to the first construct. This was indicative of the scale measuring overall self-efficacy, which was the construct of interest in the present study.

Secondly, the purpose of this study was to explore the relationship between student-athlete academic and athletic identity and their academic and athletic self-efficacy. The research intended to discover the nature of the relationship between how student-athletes self identify (as more of a student-centered person, or an athletic centered-person, or both) and their perceptions of their own capabilities (in the academic area and the athletic area). Past research has shown that self-efficacy has an important impact on performance, and that identity is key as student-athletes develop, represent the university, and subsequently must become members of a different group upon retirement from sport, indicating that both of these constructs have important implications on student-athletes. With the pressures to be both a capable student and an exceptional athlete, the identity of student-athletes is multidimensional, with the ideal student-athlete identifying equally as both things. Not only does this dual-identity cause competing time demands, but it also results in contesting psychological demands and can impact the individual long after their playing career is over. These findings should encourage professionals working with student-athletes to find ways to reinforce positive evaluation of the self as a student, and increase the student-athlete's commitment to his student role. Furthermore, an awareness of a student's self efficacy in a given area can give coaches and academic staff an idea of the tasks a student feels capable of completing, and should given them an opportunity to encourage and address those areas, and in turn potentially shape their identity.

The finding of the current study that student-athlete identity and self-efficacy are positively related is valuable and worthy of further investigation. Furthermore, the findings that student-athletes at a southeastern Division I university had high levels of academic identity, athletic identity, academic self-efficacy and athletic self-efficacy establishes a benchmark against which to evaluate other collegiate student-athletes. Differences in means and correlations based

on demographic factors yield further knowledge of student-athlete identity and self-efficacy. This research builds on prior theories of identity and self-efficacy to gain insight to student-athletes perceptions of self. As the results of this research may begin to help aid administrators, coaches and academic staff to form best practices for working with this population of student-athletes, future research may be able to expand an understanding of these areas and help guide those working with student-athletes in encouraging these unique individuals to become the best athletes, students and role models that they can become.

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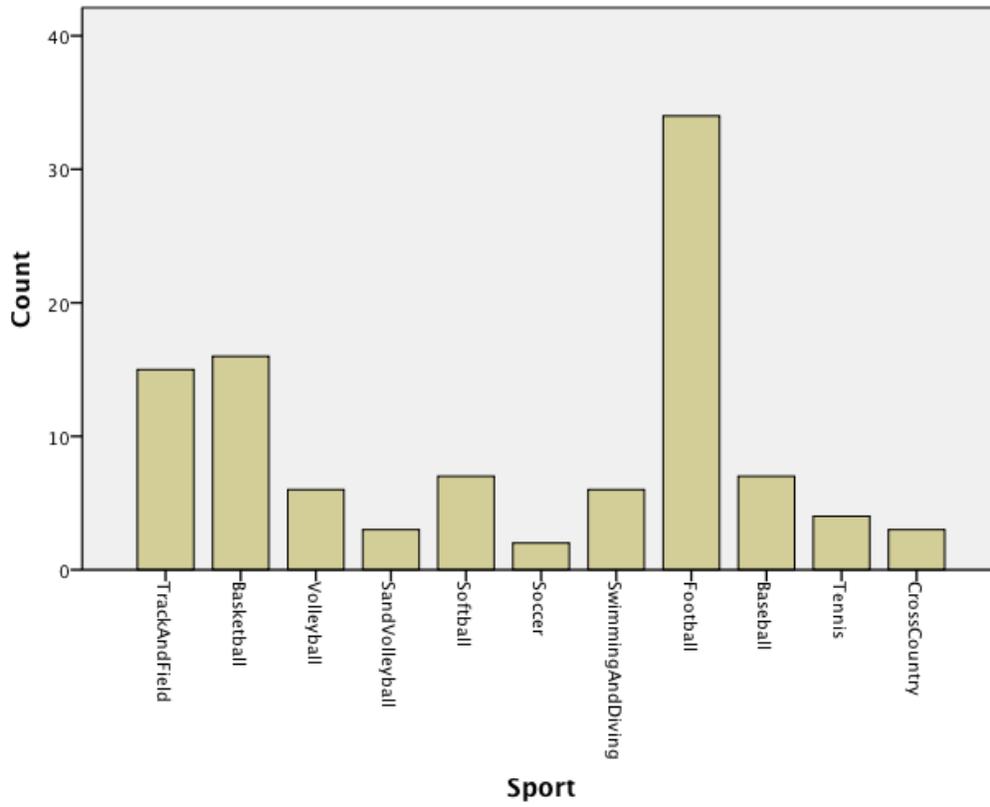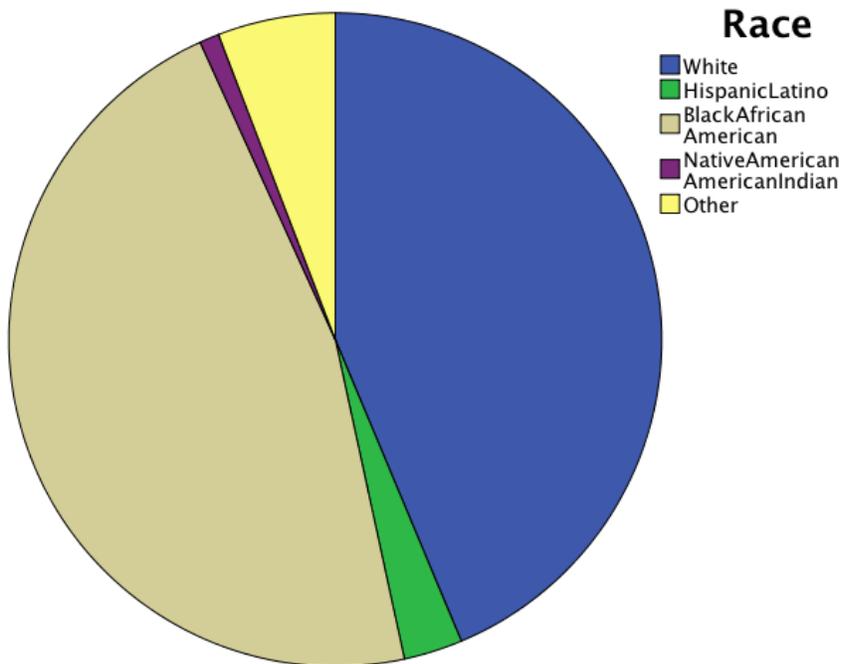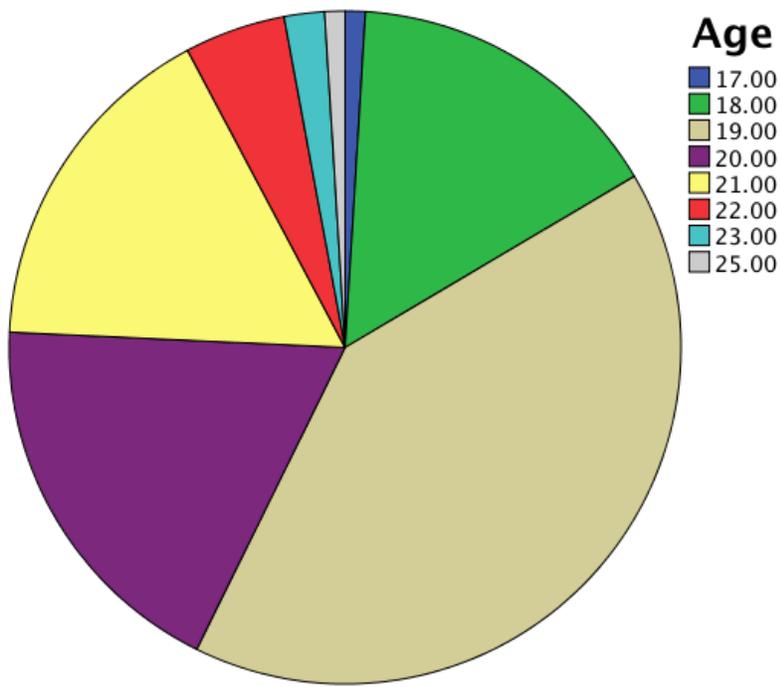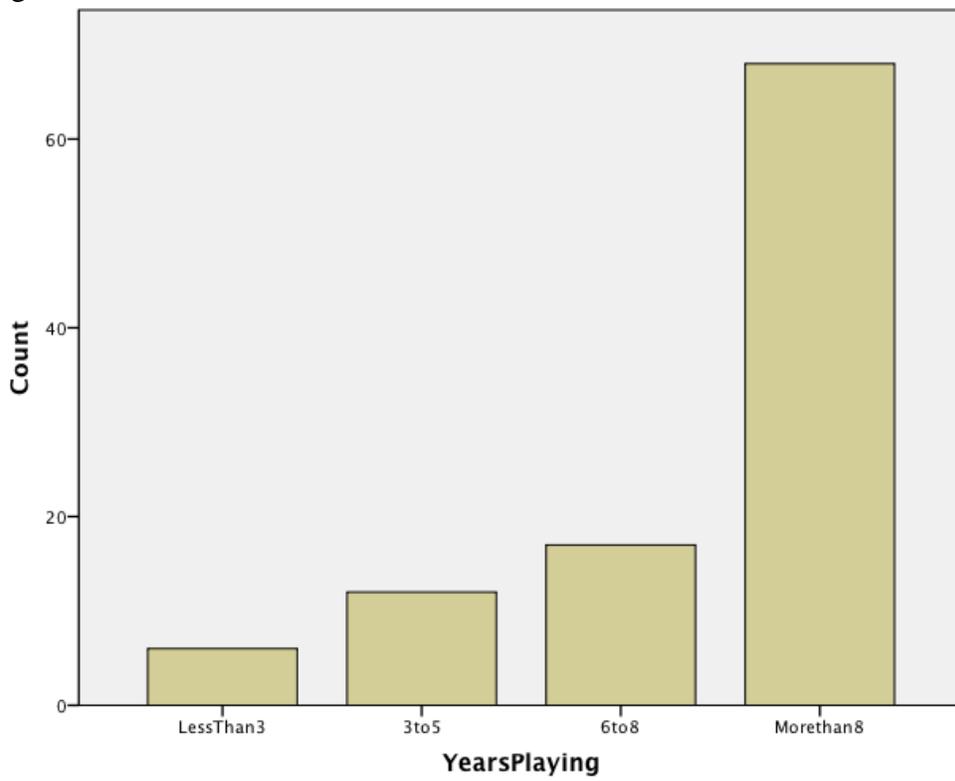
Appendix

Figure 1

Figure 2

Figure 3

Figure 4

Consent Form for Non-Clinical study of Student-Athlete Academic and Athletic Identity and Self-Efficacy

1. Study Title: Student-Athlete Academic and Athletic Identity and Self-Efficacy
2. Performance Sites: Louisiana State University
3. Investigators: The following researcher is available for questions via email:

   Principal Investigator: Ms. Bailey MacNab: bmacna1@lsu.edu

   Co-Investigators: Dr. Paul Mooney: pmooney@lsu.edu

   Dr. Kenton Denny: rdenny@lsu.edu

4. Purpose of the Study: The purpose of this quantitative study will be to collect data via administration of a survey in order to explore student-athlete identity and self-efficacy in both academic and athletic roles, and to determine if there is a relationship between the two.
5. Subject Inclusion: Current Division I Student-Athletes enrolled at Louisiana State University
6. Number of Subjects: approximately 250
7. Study Procedures: This study will be conducted by survey. Each subject will be asked to complete a survey, and will be asked questions related to their identity and their academic and athletic self-efficacy (the ability to which they feel/believe that they are capable of executing a task or behavior). Completion of the survey is not expected to last more than 30 minutes. Researchers will also collect participant demographic and data and students will be asked to self-report their current GPA.
8. Benefits: This study may reveal important information regarding the relationship between student-athlete identity and self-efficacy. It can provide insight into how different student-athletes view their role (as the student, athlete or both) and how this view may relate to their academic or athletic self-efficacy. This study will add to the literature surrounding student-athletes and potentially help educators, coaches, and student-athletes gain better understanding of the student-athlete collegiate experience and what we can do to maximize both the student and the athlete experiences.
9. Risks: No physical risks are involved in participation in this study. No major risks are involved in taking this survey, however, minimal psychological risks may include participants reflecting on uncomfortable or upsetting elements of their identity and self-efficacy. This includes consideration of shortcomings, inabilities and capabilities. Social risks may include a loss of time due to participation, and minor risks such as mental fatigue, embarrassment at their responses, or frustration.
10. Right to Refuse: Subjects may choose not to participate or to withdraw from the study at any time without penalty. Your relationship with the investigator will not be damaged in any way if you choose not to participate in the study or if you decide to quit during the study.
11. Privacy: Results of the study may be shared for educational purposes, but no names or identifying information will be included in the submission of the information. Subject identity will remain confidential. Documents will be maintained in a locked area when not being gathered. Entered data will not include names and will remain on the computer of the primary investigator.
12. Financial Information: There will be no financial compensation for participating.

Signatures: The study has been discussed with me and I understand the terms of participating. I acknowledge that any additional questions regarding study specifics should be directed to the investigator. I agree to participate in the study described above and acknowledge the investigator's obligation to provide me with a signed copy of this consent form.

Subject Signature: _____ Date: _____

LSU

ACTION ON PROTOCOL APPROVAL REQUEST

Institutional Review Board Dr. Dennis Landin, Chair 130 David Boyd Hall Baton Rouge, LA 70803 P: 225.578.8692 F: 225.578.5983 irb@lsu.edu | lsu.edu/irb

TO: Paul Mooney Special Education

FROM: Dennis Landin Chair, Institutional Review Board

DATE: January 27, 2015 **RE: IRB#** 3585 **TITLE:** Student-Athlete Academic and Athletic Identity and Self Efficacy **New Protocol/Modification/Continuation:** New Protocol_

_____ _____ _____
Review type: Full **Risk Factor:** Minimal X Uncertain _____Greater Than Minimal_____

Expedited X **Review date:** 1/26/2015

___ ___ _____ _____
Approved X

Disapproved_____

_____
Approval Date: 1/26/2015 **Approval Expiration Date:** 1/25/2016

Re-review frequency: (annual unless otherwise stated)

Number of subjects approved: 250

LSU Proposal Number (if applicable)**:**

Protocol Matches Scope of Work in Grant proposal: (if applicable)

By: Dennis Landin, Chairman

PRINCIPAL INVESTIGATOR: PLEASE READ THE FOLLOWING –

Continuing approval is CONDITIONAL on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects*

2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved.

3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination.

4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.

  5. Continuing attention to the physical and psychological well-being and informed consent of the individual participants, including notification of new information that might affect consent.

6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study.

7. Notification of the IRB of a serious compliance failure.

8. SPECIAL NOTE: *All investigators and support staff have access to copies of the Belmont Report, LSU's Assurance with DHHS, DHHS (45 CFR 46) and FDA regulations governing use of human subjects, and other relevant documents in print in this office or on our World Wide Web site at http://www.lsu.edu/irb*

_____ _____ _____ __ _____ _Dlandin_ _____
_____

Vita

Bailey Ann MacNab, a native of Duxbury, Massachusetts, received her bachelor's degree at the University of Massachusetts, Amherst in 2012. Thereafter, she completed a yearlong internship with the University of Massachusetts Academic Services for Student-Athletes department. As her interest in the field of academic support for student-athletes grew, she made the decision to attend graduate school and was admitted to the Department of Education at Louisiana State University. She simultaneously works as a Graduate Assistant in Academic Support for Student-Athletes. She will receive her master's degree in May 2015 and plans to continue her work in academic support for student athletes while continuing to pursue her doctoral degree.